


2-1-1981

H & V News

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FEBRUARY 1981

IRELAND'S BUILDING SERVICES MAGAZINE

H&V News

**'81
InVex**

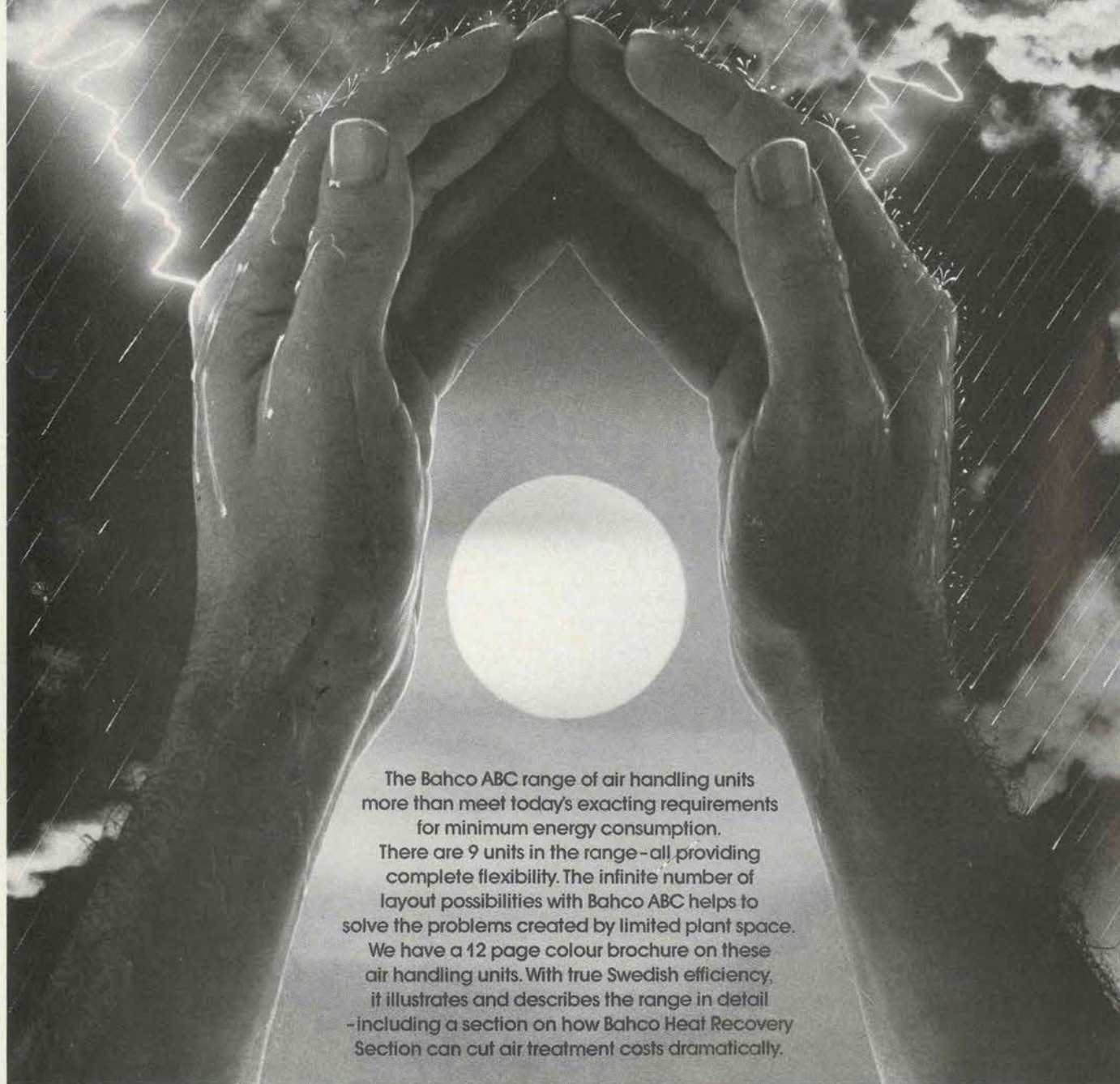
17—19 FEB

RUNNING CONCURRENTLY WITH

**ilestra
'81**

Ireland's
Specialist Electrical
Engineering Exhibition

Nobody handles air better than Bahco.



The Bahco ABC range of air handling units more than meet today's exacting requirements for minimum energy consumption. There are 9 units in the range - all providing complete flexibility. The infinite number of layout possibilities with Bahco ABC helps to solve the problems created by limited plant space. We have a 12 page colour brochure on these air handling units. With true Swedish efficiency, it illustrates and describes the range in detail - including a section on how Bahco Heat Recovery Section can cut air treatment costs dramatically.

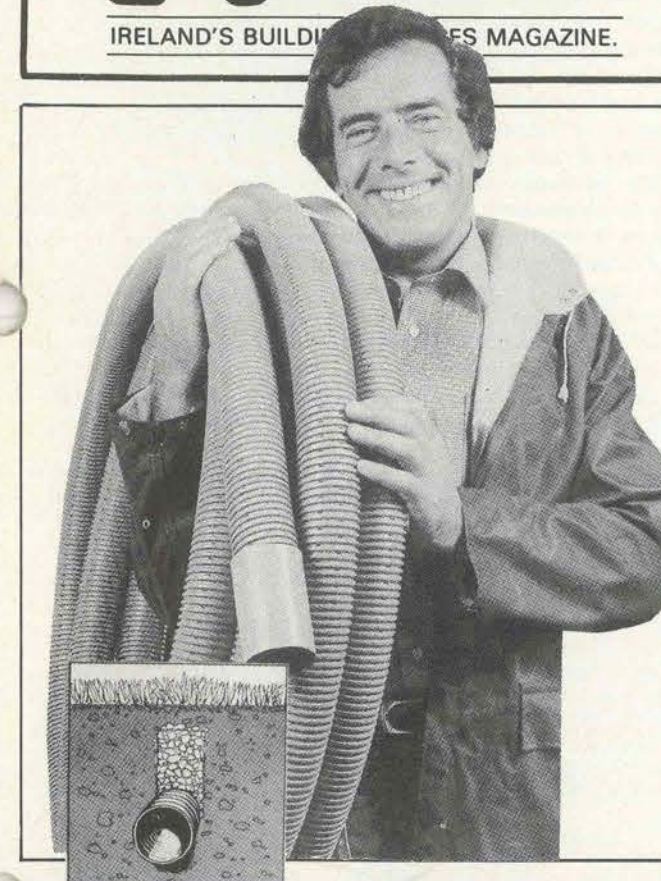


Air Curtains · Air Handling Units · Air Pollution Control · Space Heaters
Also (Bahco Tools Ltd) · Adjustable Wrenches · Screwdrivers · Spanners · Hydraulic Tools · Engineers' & Electronic Pliers
BAHCO VENTILATION LTD BAHCO HOUSE BEAUMONT ROAD BANBURY OXON OX16 7TB TELEPHONE: BANBURY 57461

Sole Irish Agents **CLIMAVENT LTD.** 29 North Brunswick Street, Dublin 7. Phone: 776615 Telex: 31718
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H&V News

IRELAND'S BUILDING SERVICES MAGAZINE.



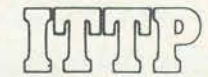
PIPEWORK AND DRAINAGE. PAGE 12



ULSTER NEWS. PAGE 20

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IhVex/Electra '81

IhVex '81, Ireland's building services exhibition will be officially opened by the Minister for the Environment, Mr. Raphael Burke, T.D., on Tuesday, 17th February at 11am. This issue contains the official catalogue of exhibitors at the show and also contains details of the Chartered Institution of Building Services' one day seminar which will be held on the final day of the show that is February 19.

This will be the fourth, and perhaps most important IhVex, especially when one considers the fast moving changes taking place in this sector of the services industry. With 1981 heralding the first year of what will hopefully be a decade of opportunity with considerable potential for those prepared to work at it, promotional effort will play a major role in a firm's success/failure rate. This is where IhVex comes in. The exhibitors list reads like a "Who's Who" of the industrial sector, thereby reflecting its importance, while promotional material and activities surrounding the holding of the exhibition itself also highlight its importance. Admission is strictly on a "trade only" basis and opening times for the duration of the three-day event are 11 am to 8 pm.

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NEWS



● Pictured at the recent CIBS seminar on "Recent Developments in Low Energy Lighting" given by Michael Moloney (ESB). Front row L to R: Michael McDonnagh, Chairman, Republic of Ireland CIBS; Michael Buckley, Hon. Sec.; Robin Aldworth, Chairman, Lighting Division, CIBS. Back row: Andrew Ramsey, Dep. Sec., CIBS; Larry Keane, Vice-Chairman, Republic of Ireland CIBS; Don Byrne, Committee Member; Kieran Butler, Committee Member.

PARKRAY PROMOTION WINNER

Gary Stewart of Messrs. G. & T. Garton in Inchicore, Dublin, was the lucky winner of a promotion for dealers organised by Instaheat Limited and held during the months June to October, 1980.

The competition was open to dealers who purchased a Parkray appliance from Instaheat and Gary Stewart now finds himself the recipient of an attractive week-end for two in London with all expenses paid.



● Photo shows Tom Ryan, newly appointed Sales Representative with Instaheat Limited, presenting the travel voucher to Gary Stewart. Also in the picture is Anne O'Brien of Instaheat Limited who drew the winning ticket.

ON THE LIGHTER SIDE

A very successful technical evening was held by the Irish Branch of the Chartered Institution of Building Services on Thursday January 22nd last in Dublin. Recent low energy lighting developments were outlined by Mr. Michael Moloney the ESB Lighting Specialist in a paper which was well received by a record attendance of some seventy people. The attendance was representative of the Universities, Colleges, Lighting Manufacturers, Contractors and Consultants. Messrs Robin Aldworth and Andrew Ramsey, Chairman and Secretary respectively of the CIBS lighting division also attended.

Mr. Moloney dealt with the following four major lighting developments: Lamp Technology Advances, Improvements in luminaire design, Practical task lighting systems, and Control systems permitting better use of Daylight.

In developing these points the author explained in an interesting manner how lighting loadings had tumbled from 50W/m² to a possible 8W/m² as a direct result of research done in recent years.

Mr. Aldworth in summation of the evening congratulated the Branch on a most successful and enjoyable presentation.

TRANSPORT FRIDGE SEMINAR

New and proposed E.E.C. legislation on the transportation of fresh and frozen foods was the central theme of a seminar held in Dublin, organised jointly by Cross Refrigeration Limited and Transfrig Limited.

Entitled "The Effects of E.E.C. Legislation on Transport Refrigeration in the Irish Context", the seminar was attended by managers in the food, haulage and related industries. It covered wide ranging topics such as current legislation for international transport, the present French and British standards and the history and development of transport refrigeration. It also included a slide presentation on eutectic units.

Cross Refrigeration, who specialise in the supply and installation of commercial and industrial refrigeration

equipment from offices in Dublin, Cork and Limerick, are now sole distributors of the Transfrig range of equipment in Ireland.

Transfrig Limited, of Gosport, are leading refrigeration engineers and equipment manufacturers, specialising in transport refrigeration. They are the only U.K. manufacturers of originally designed equipment.

Details of the Transfrig range of refrigerated transport equipment were also announced at the seminar, where Transfrig were represented by their Technical Director, Trevor Stuckey and Export Manager, Roger Day. Jim Keating (Managing Director) and Dermot Walsh (Marketing Director) headed the Cross team at the seminar.



'Class O': the better facing.

Better—because this new Fibreglass insulation facing provides a factory-applied decorative finish which

achieves Class 'O' performance, satisfying Building Regulations (1976) E15.

It is also a vapour barrier, and can therefore be used on hot or cold pipes or ducts.

It never needs painting (dirt and grime are simply wiped from its specially coated surface); it looks good enough to be left exposed; it will not rot, age or sustain mould. It is the all-purpose finish for all applications, exposed or concealed. A single finish replacing old specifications for canvas, paint and aluminium foil. Yet it costs no more than canvas.



Fibreglass

the best way to say insulation

Fibreglass Limited, 21 Merrion Square North, Dublin 2. A subsidiary of Pilkington Brothers Limited.

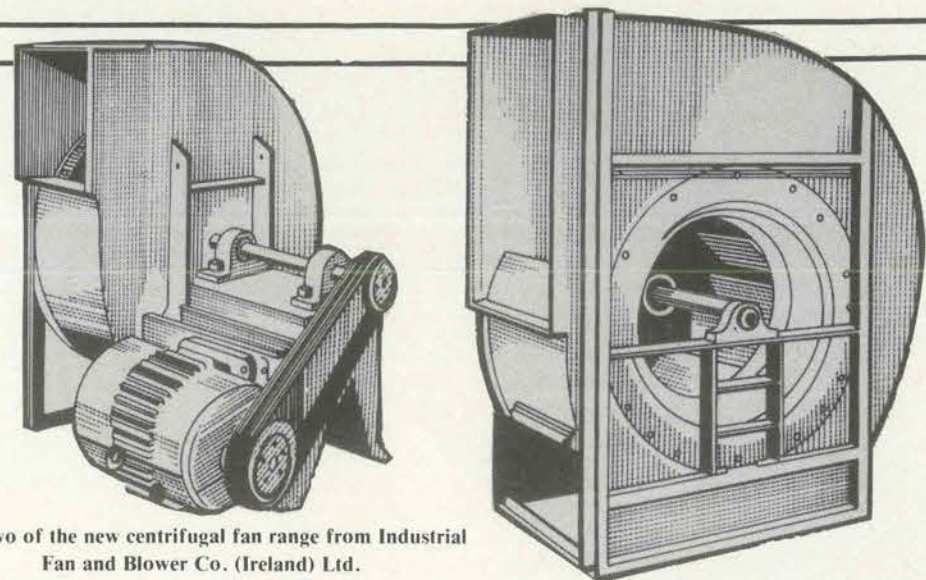
NEWS

New Irish Fan Co.

Declan Fehilly like many at that time left his native Bray in the 1950's and settled down in Britain where he became an engineer and worked successfully there for 24 years. Then he heard of an offer he could not refuse which was an incentive scheme offered by the IDA for Irish engineers in the UK to return to Ireland and set up small engineering businesses here. This all happened in late 1979 and the business he chose was the business he knew well and that was the manufacture of fan equipment.

"I wanted to put something back into the country and create some employment" he says, adding that the major attraction was the help both financial and advisory offered by the IDA.

The help has extended to a dramatic rescue, when, with £¼ million worth of equipment already under shipment to Dublin from



● Two of the new centrifugal fan range from Industrial Fan and Blower Co. (Ireland) Ltd.

the UK, the deal Mr Fehilly had worked out to rent a factory for his enterprise fell through, and he found himself without premises.

The IDA found him his present building at Cherry Orchard Industrial Estate in eight days, the equipment was moved in, and his new company was born.

Three weeks later he was shipping a load of twenty industrial fans to Britain.

Britain will be his main market, as it is the one he

knows best. He has set up a marketing and warehousing operation there, with a team of sales representatives and an office staff and he divides his time between Ireland and Britain keeping an eye on both operations.

His export target is £1 million by 1983 and then he hopes to be employing 70 people. At the moment there are 16 people working on the shop floor and five in administration.

His family are as keen on the move home as he is, although, because two of his children are at university, and one is still at school, he has postponed setting up a home here for a year so to allow them to finish their courses.

Declan Fehilly's company is Industrial Fan & Blower Co (Ireland) Ltd, Unit 42 Cherry Orchard Industrial Estate, Dublin 10, (Tel: 268229/268262/268220).

NEWS

Curtain Booklet

A new booklet on the merits of air curtains reveals that an open door in a typical industrial environment loses 75,000 kWh of heat energy per year. This corresponds to a loss of £1,300 on the average heating bill (calculations are for a typical industrial opening four metres square.)

The new booklet, called 'Pocket Book Facts on the Art of Protecting Industrial Doors Against Draughts', is published by Bahco Ventilation Ltd, Banbury, Oxon. It explains just why and how cold air is encouraged to flow into buildings in the form of draughts — and how to prevent them.

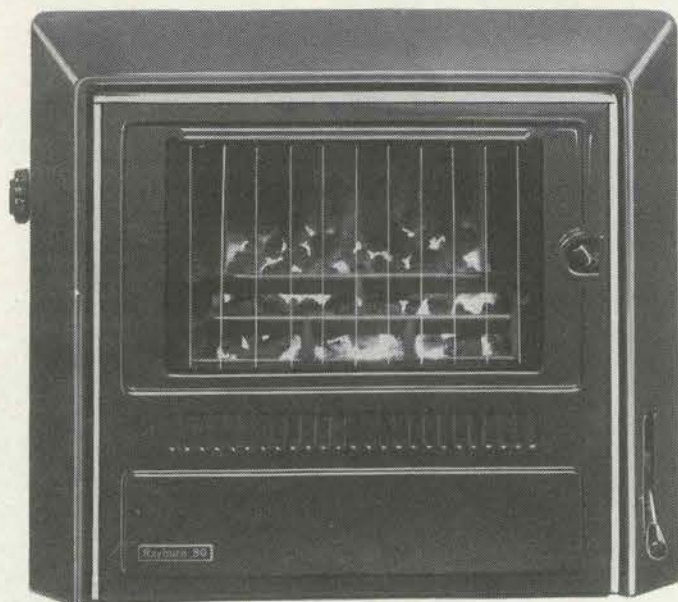
A survey of three possible types of air curtain outlines how air curtains work and their different applications.

The three-colour booklet, small enough to fit in the pocket, is available free from Bahco Ventilation Ltd, Banbury, Oxon.



● Pictured at the recent signing of the Mechanical Plant Contract for the North Ardfert Regional Water Supply Scheme — Mechanical Plant Installation, is Mr. T. F. Collins, County Manager, Kerry County Council (seated centre, signing the contract). Also in the picture are:- (seated) Mr. A. T. Townsend, Chief Assistant County Engineer, Kerry County Council; Mr. J. English, Managing Director, Lister Tubes Ltd., Dublin; Mr. D. Kavanagh, County Engineer, Kerry County Council; Mr. M. J. Gannon, Partner, The Ryan Hanley Smyth Partnership, Consulting Engineers. (Standing) Mr. J. Ronayne, County Accountant, Kerry County Council; Mr. T. Murphy, County Law Agent, Kerry County Council; Mr. D. Fitzgerald, Chief Assistant County Engineer, Kerry County Council; Mr. S. Dooley, County Secretary, Kerry County Council; Mr. J. Mooney, Associate, The Ryan Hanley Smyth Partnership, Consulting Engineers; Mr. T. Ruddy, Manager (Pumping & Environmental Services Section), Lister Tubes Ltd.; Mr. R. O'Lionaird, Resident Engineer, North Ardfert Regional Water Supply Scheme; Mr. B. O'Connor, Staff Officer, Kerry County Council. The Mechanical Plant Contract, valued at £100,000, involves the installation and commissioning of pumping plant and associated equipment. The Plant will be commissioned by the end of August, 1980. Contractors Lister Tubes Ltd.

HOT NEWS.



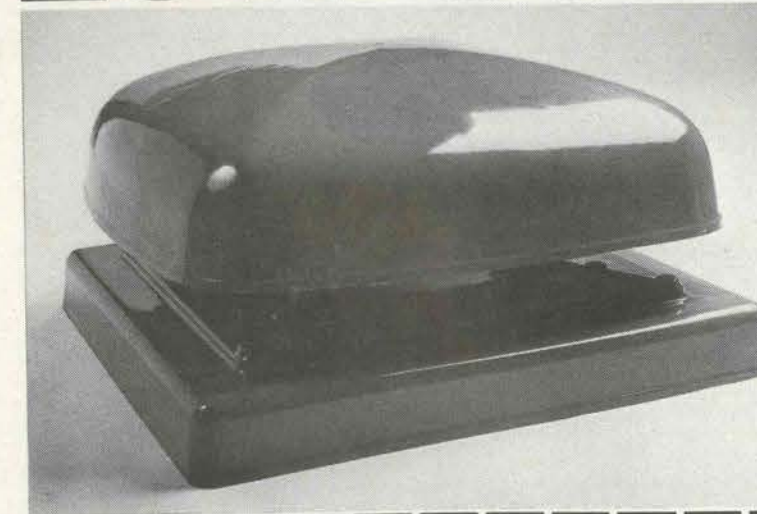
GLYNWED

Taney Distributors,
Unit 4,
Riversdale Industrial Estate,
Bluebell Avenue,
Dublin 12
Tel: 508120
Telex: 24147

Having been appointed distributors for the Rayburn range of heating appliances which includes the new Rayburn 80, as illustrated.

Pat Gaffney, Managing Director, or Andrew Kavanagh, Heating Manager are just a phone call away.

LOW OVERHEADS



One look at the Europak roof units tells you they're keeping a low profile.

One look at the specification tells you they're a cut above the competition.

10 sizes. A light, strong, fibreglass cover that's maintenance-free and corrosion resistant.

And all powered by the superb Euroseries axial flow power unit that integrates the precision made aluminium impeller and external rotor motor for silent, vibration-free running.

All our roof units with the exception of the two largest sizes — 800mm and 1000mm — arrive pre-assembled and packed in one carton ready for action.

Fans come in a separate carton so installation is fast and simple. Incidentally we don't assemble the two largest models because you'd be hard pressed to manhandle them on site.

You simply can't ask for more than that. Get the low down on Europak today.

EUROPAK

We've got roof units all wrapped up.

Please send me literature on Europak.

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Company _____

Address _____

IHVN 2/81

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BELFAST
ENVIRONMENTAL SUPPLY Co.,
BELFAST 54429

roof units

Peartree Lane, Dudley, DY2 0QU.
Telephone Brierley Hill (0384) 74062
Telex 335696 RUNITS G

NEWS

CIBS Programme for Remainder of 1980/81 Season

Saturday 7 February	Visit to Allied Irish Banks' Headquarters, Ballsbridge
Thursday 19 February	One Day Symposium on Practical Energy Conservation Strategies, at the IHVEX/ILECTRA, RDS, DUBLIN
Thursday 26 March	Building Automation Systems, by G. Curran
Thursday 9 April	Annual General Meeting and Annual Student Awards
Friday 15 May	Golf Outing and Ladies' Evening at the Hermitage Golf Club

Meetings will be held at the Institution of Engineers of Ireland, 22 Clyde Road, Dublin, 18.00 for 18.30 unless otherwise stated.

Further details can be had from the Hon. Secretary, M. D. Buckley MCIBS, c/o Walker Air Conditioning Ltd., Dublin Industrial Estate, Finglas Road, Dublin 11, Telephone: 300844/307421 (office) 884147 (home).

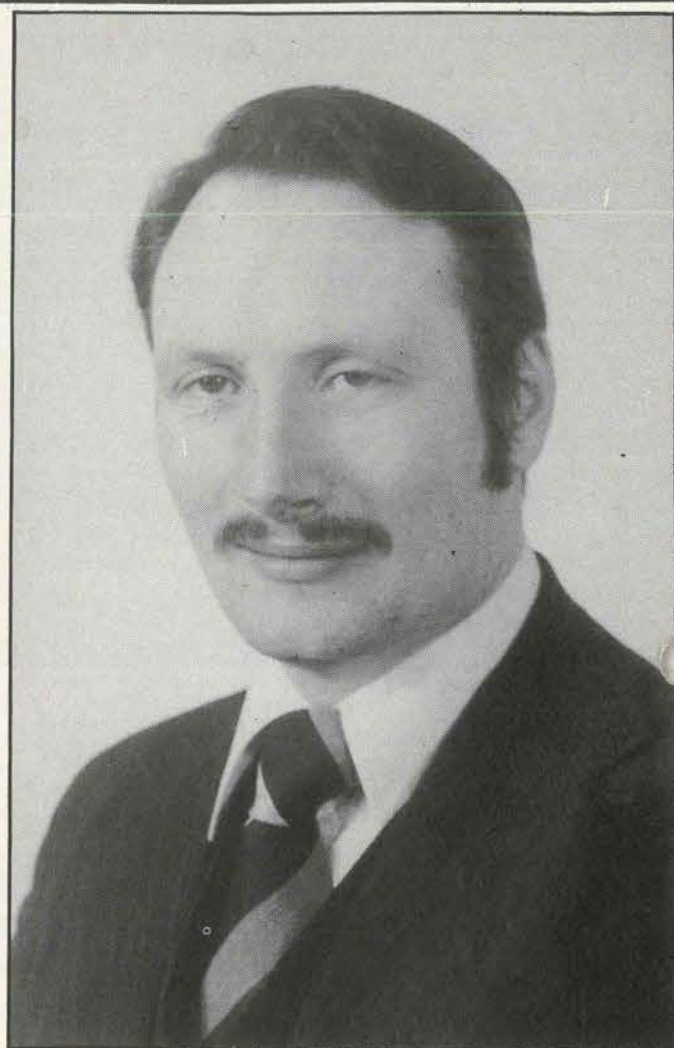
Hitachi Chemical Co. Ltd.

U.K. importers/sole distributors of solar heating collectors and devices for industrial and domestic application. require stocking dealers throughout the Republic of Ireland. This is a superb low investment opportunity to acquire county/area franchises in the growth market of energy conservation with the products of one of the worlds leading manufacturers in this field.

Enquiries are welcome from genuine firms and business houses allied to the heating, plumbing, ventilating, air conditioning and building professions who have an existing organisation capable of marketing/installing and providing first class after sales service behind this world brand name product.

Write in first instance to the Marketing Manager.

Riomay Heating Ltd.
1a Whip-Ma-Whop-Ma-Gate,
The Shambles, York.
YO1 2BL.



● Noel Howard, Thermplant's Manager in Cork.

THERMPLANT IN CORK

Thermplant (Ireland) Ltd have announced the opening of their new offices in Cork and the appointment of Mr. Noel Howard as Manager for Munster. Thermplant (Ireland) specialises in the fields of industrial boilers, energy and waste heat recovery, coal handling and firing and gas control and regulation equipment. Mr. John Hoey, Managing Director of Thermplant commented that with this new office in Cork, Thermplant would be in a position to offer a quicker and better service to

industry in the Munster area. With energy costs playing such an important role in industries very survival, it is imperative to be able to offer quick, effective service on a local basis. Mr. Howard has had a number of years experience in the industrial heating and energy fields before joining Thermplant (Ireland).

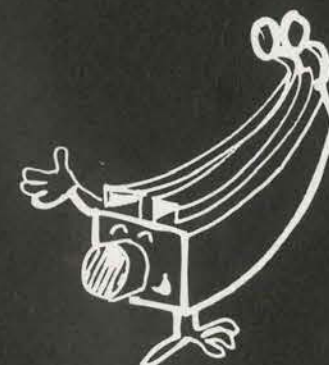
The address in Cork is Thermplant (Ireland) Limited, Kilcoolishal, Glanmire, Co. Cork. Tel: (021) 822224 Telex: 32360.

Meet the energy team -Carlyle from Walker-



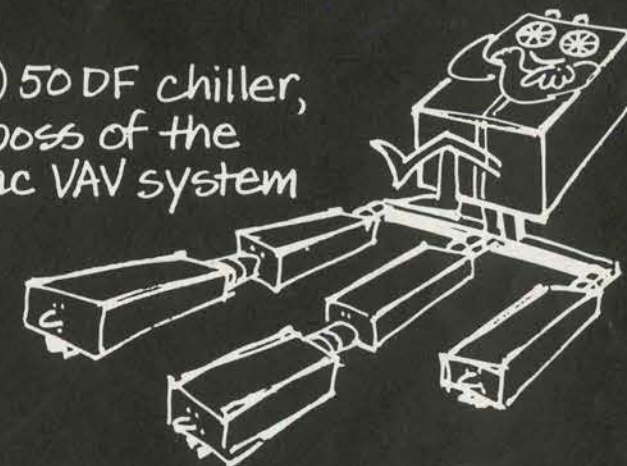
① The unbeatable range of energy miser heat pumps

② Heat reclaim chillers with multi-compressors for even lower running costs



③ Moduline VAV systems with inherent self-balancing savings

④ 50 DF chiller, the boss of the Modupac VAV system



⑤ Unikal computer programme analysis to assist you in selection of the most energy efficient system

Walker Air Conditioning

Walker Air Conditioning Limited

(*) A member of the Jefferson Smurfit Group

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9a Cherryhill Road, Dundonald, Belfast BT16 0JH Tel: Dundonald 5235 Telex: 747681
Washington Road, Unit 10B, Abbotsinch Industrial Estate, Paisley PA3 4ET
Tel: Glasgow 887 0551 Telex: 779406
Carlyle Distributor for Ireland, Scotland and Northern England



the air conditioning leader



● Inspecting one of the Powrmatic air heaters installed at Fluid Dynamics premises in Sandyford were (L-R) Winston Taylor, HCD Ferguson and Peter Murray, Murray Bros., Heating Contractors.

CHANGING TIMES

Our photographer took the accompanying picture on a recent assignment to the Sandyford Industrial Estate, Dublin where the changing times in the heating trade were very obvious. Not so long ago this picture would have shown an oil fired air heater but now the picture shows an atmospheric gas fired heater with an atmospheric burner on LP Gas (Propane). Many new factories now choose LPG as they fear they may be let down on oil supplies and LPG can also be used by the companies fleet of cars and vans.

Other advantages of using LPG include the fact that it is a very clean fuel and is simple to operate. Having praised LPG that does not mean that oil is no longer an acceptable fuel as there are many who feel that the market will remain stable for some time to come and oil will be easily available though at a premium price.

For those interested the picture is one of a Powrmatic CA 300 gas fired air heater supplied by HCD Ferguson and installed by Murray Bros, Building Services Contractors.

Oil Burner Development

In line with Bentone Verken's reputation as one of Europe's leading oil burner manufacturers constant development and research is taking place to meet the varying requirements of the heating industry.

Two problem areas have come to the fore in recent years — the smallest and the largest ranges. Both problems have the same cause, the variable oil quality on the European market. This is not just a question of waxing in cold weather, of which we are all familiar, but a variation in specific gravity and viscosity on various markets.

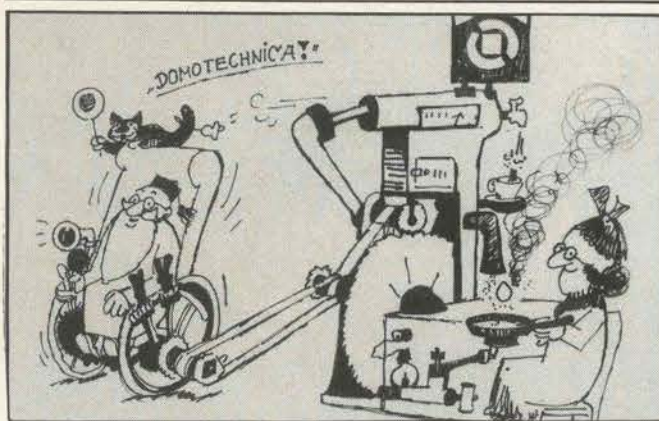
To overcome the 50,000 - 100,000 Btu/hr difficulties pump pressures are now being raised to force atomisation through the nozzle. These pressures can be as high as 180 or 200 p.s.i. which causes more noise and wear on the pump and also increases the throughput of oil to boilers which will then be operating on full output whereas many users would normally want to use about 60% of their boiler capacity. Using the Bentone FC2F nozzle sizes can drop to 0.5 with a pressure of 100 p.s.i. (the max pressure allowed is 130 p.s.i.). With this nozzle size and pressure the atomisation and combustion are

perfect giving a high CO₂ and, as the boiler is being fired at somewhat below its max rating, a much lower stack temperature. Modern boilers with their slight over-pressure and small combustion chambers are particularly suitable for such installations although there is a dual fuel 114,000 Btu boiler in Dublin firing for the last three months at 12½% CO₂ and 165°C nett with a .55 U.S. gallon nozzle at 120 p.s.i. Modifications for burners back to 1973 are available.

The increase in heavier oil viscosities and from some companies find the disappearance of the 200 second grade creates a need for more sophisticated larger burners.

Bentone heavy oil burners can now fire up to 1250 sec oil. New preheaters of larger output and volume, larger solenoids, redesigned nozzle assemblies and gaskets, preheaters in fuel pumps and recirculating impulse relays to avoid any build up in internal lines have been introduced.

Pumping units with preheaters, double filters and auxiliary automatic change over pumps are also available. Further information from Precision Heating Equipment Ltd, Santry, Dublin.



● One of the products you won't see at Domotechnica in Cologne.

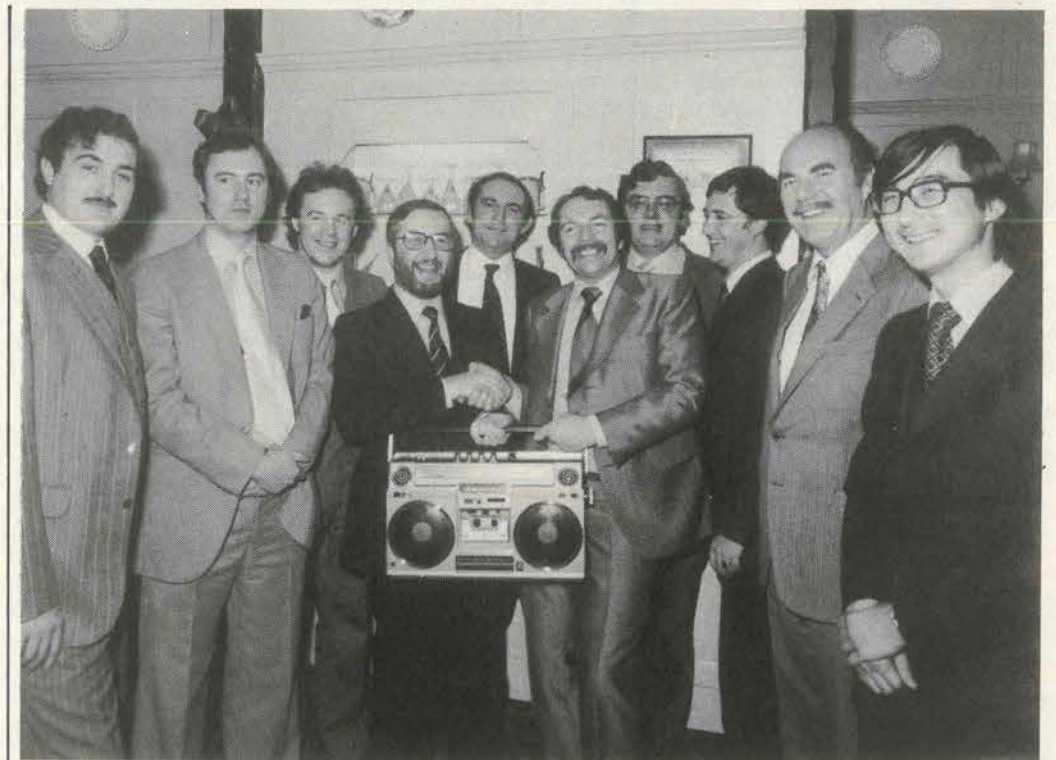
FLUE FAILURE AND FLUE STRUCTURES

Premature failure of some flue linings during the past few years has emphasized the need for more rigorous design procedures, more comprehensive materials data and much closer liaison between the structural and building services engineers. To provide up-to-date guidance on these and other aspects of the problem, BSI has now published a new code of practice, namely BS 5854 Flues and flue structures in buildings.

BS 5854 presents the latest information on current lining materials and makes recommendations for the design and construction of flue linings and structures that serve boilers and air heaters burning solid, liquid or gaseous fuels and having outputs of 45 kW and above. Linings are considered from a structural viewpoint (eg when subjected to self-weight, wind and thermal loadings).

The code indicates the design areas requiring collaboration between the structural engineer and the building services engineer and provides the necessary design criteria, suggested procedures and methods of design and construction as well as guidance on the selection of suitable materials.

Typical examples and calculations are given for demonstration purposes but do not preclude other methods of computing satisfactory designs. References in the code to the 'chimney height memorandum' relate to the HMSO publication Chimney heights. Second edition of the 1956 Clean Air Act memorandum which deals with the calculation of



● Toshiba Air Conditioning Products Sales Manager Beau O'Connor (centre left) presents Eric Goodman of Commac (London) Limited with the Toshiba Distributor of the Year Award in London. Also in the picture, from left, are Nick Parker and Mike McCourts, of Coolair Equipment, Manchester; John Davidson of B.L. Refrigeration and Air Conditioning, Belfast; Oliver Barry, of Saireco Limited, Dublin; Graham Byard of International Engineering Services, Gibraltar; David Twiggs, of Commac (Bristol); and Assistant Managing Director Derek Jeffs and Marketing Liaison Manager Ken Oghia of Toshiba (UK).

chimney heights likely to be suitable for most solid or liquid fuel appliances.

Copies of BS 5854 may be obtained from BSI Sales Department, 101 Pentonville Road, London N1 9ND. Price £19.50 (BSI Subscribing Members £9.75 Sterling).

Abbeyfeale Water Scheme

A £1 million project for Limerick County Council, to construct a water supply scheme for Abbeyfeale, begins on January 5th. Main contractors are McInerney (Civil Engineering) Ltd., who will construct a river intake, pumphouse, treatment works, reservoir, and main pipeline.

The scheme will take 15 months to complete, and will employ 30 local people during construction. Consulting engineers are Messrs. M.C. O'Sullivan, of Cork.

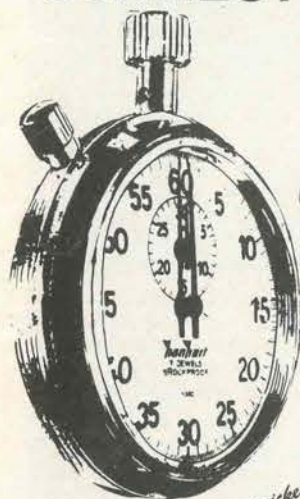
IRISH PARTNER

An international group with a highly successful manufacturing and sales record in Ireland (our Irish sales were extensive last year) seeks an arrangement with a suitable company with a heating and ventilating background to work together towards a profitable conclusion. If you are the principal of a company, or a specialist agent, seeking to extend your operations with the co-operation of a successful manufacturer please contact us. We will supply you with full and confidential information prior to a meeting in Dublin.

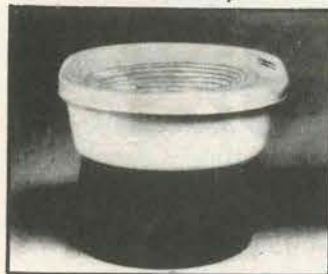
Davies Fleming & Associates Ltd.,
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Park Terrace, Northampton
NN2 7HG.

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SELF-SEALING PAN
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the fastest, surest way for
outlet link-ups



no jointing
required - fits
in a flash
to the pan



- ★ Fitted in less than one minute.
- ★ Self sealing by means of multiple flexible seals.
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South Quay, Arklow, Co. Wicklow.
Tels (0402) 2144 & 2955.

PIPELINE

By T. Piece

GREAT GAS

As predicted the official approval for the pipeline from the Kinsale gas field to Dublin has been given and now the decision of which is the best route has to be taken. In the light of the decision to rescue Limerick Gas it is obvious that that town will be a recipient in the near future of 'Cork Gas' so it would seem that towns along the way like Clonmel and Kilkenny who already have town gas systems are likely to be on the route. But what of other towns who have town gas systems and are not so favourably placed on the map to be on the direct route from Cork to Dublin, towns like Wexford, Waterford, Dundalk and Drogheda what will be the fate of these towns gas systems if they did not get natural gas? On the other hand is there a possibility that the gas grid will be even more extensive than first thought and towns like Athlone, Mullingar, Sligo and of course Galway city may be piped for gas? The answers to these questions seems to be political and what in pure financial terms might be a failure, it might be a very good political move in an election year.

While on the subject of gas it is a sign of the changing times that one of the largest manufacturers of cabinet bottled gas heaters has gone broke in the UK due to a slump in sales we hear. One spin off of closure is the likely dumping of surplus stock on the Irish market at a time when local distributors are finding it a very tough time to sell both heaters and bottled gas itself.

An interesting piece of news came my way recently with the announcement that 146 miles of North Sea Gas pipeline has been completed in 9 months

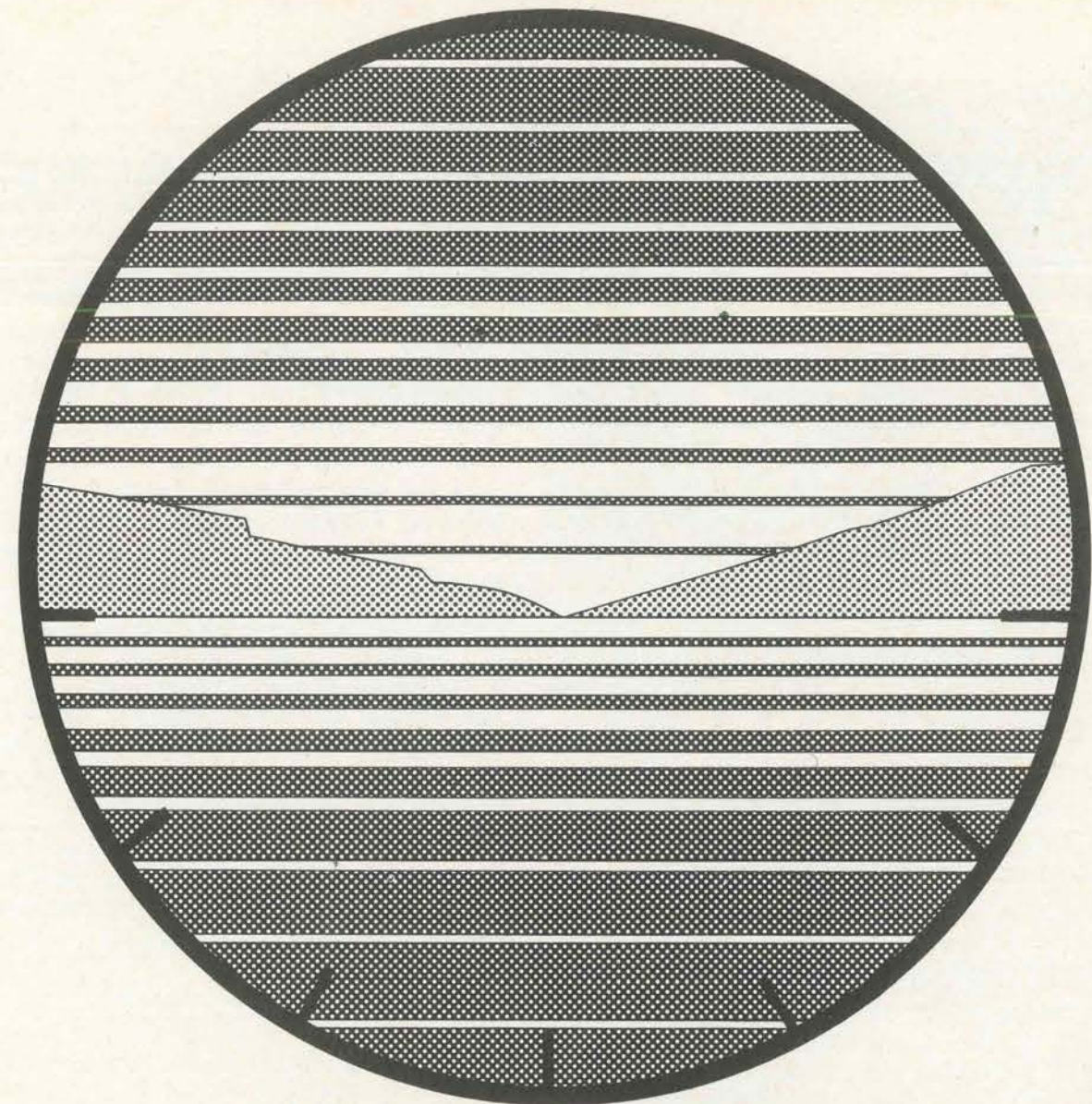
which was in fact ahead of schedule for the project. Does this mean the Cork to Dublin line will be finished in 9.86 months, I doubt it very much.

BEANS MEANS COAL?

The latest in the coal business chase to become the 'real alternative' to CDL I believe is Tony O'Reilly of Heinz tinned foods fame, the story in the trade is that he is going to use the ill-fated dock facilities of Gouldings at Alexander Basin in Dublin to unload the beans, sorry I mean coal, or maybe I could have been right first time if he decides to take in anthracite which uses such names as beans, peas and nuts to describe grades and sizes of the fuel, anyway the story seems to be a strong one and who knows it may even prove to be true.

BELT AND BRACES

In a recent press release from the long established cowl manufacturers O.H. Ltd it lists a certain John Kelly Ltd of Belfast as a stockist and distributor for their product in Northern Ireland. Could there be two John Kelly Ltds' at 23 Station Road, Belfast or is it one and the same company who have recently taken over the entire Aero-cowl operation. Is this a case of wearing a belt as well as braces?



Winning tomorrow's market - with energy Sanitation · Heating · Air-conditioning

New technologies close supply gaps. Further developments awaken new needs. Energy and environment are the topics of the day. These branches are in the spotlight.

What: The complete review, the realistic answer as to the alternative, as to practicable progress.

Where: ISH Frankfurt. The largest trade fair on this topical subject



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PIPEWORK AND DRAINAGE

PIPEWORK AND DRAINAGE

In common with the building industry in general, manufacturers of pipework and drainage have experienced a considerable downturn in business over the past year but developments in pipe sizes and accessories are still taking place.

The small diameter market particularly has gone through a valley period, with private housing schemes all but at a standstill, although local authority housing schemes have continued together with some land drainage. However, the serious slump in farming incomes over the past two years have inevitably taken their toll on agricultural investment programmes.

The large diameter sector has also suffered with civil engineering projects not so much being cancelled as deferred. Drawings are done and are simply awaiting the green light for them to be sent out to tender.

Some are hoping that the recently announced estimates for the public services

which include proposed increases in water supply and sewerage grants from £4m to £7.4m, water supply and sewerage subsidies from £12.46m to £12.68m and road and related grants from £53.6m to £80.698m will keep the market from dropping further and possibly give some relief to the industry.

In the large diameter market Tegral have a new Tacseal joint for their asbestos cement sewerage and drainage pipes, and Flemings Fireclays are now offering 800mm diameter clay pipes with 900mm and 1,000mm coming shortly.

The small diameter markets in both rain-water and soil systems and underground drainage remain highly competitive, the push-on joints for plastic systems and the various quick-jointing systems for asbestos cement, clay and cast iron pipes resulting in selection being more than ever based on material price and long-term performance rather than installation ease and cost.

Plastics

The impact of PVC piping systems in the building and construction industry since the 1950s has been dramatic and contributed beneficially to the industry in terms of cost, labour saving and versatility. An early pioneer in PVC pipe manufacture, Wavin Pipes, also made the important decision to develop and manufacture its own pipe fittings so that today it is the only Irish manufacturer offering complete pipe systems and manufacturing 95 per cent of its own fittings.

These durable, light and easy to install pipe systems cover a full range of applications including water-mains, sewer pipes, ducting, land drainage, soil and waste pipes, domestic plumbing and other specialist applications. It was in fact the availability of Wavin's PVC watermain that made the rapid expansion of group water supply schemes possible. Wavin of course also manufacture high and low density polyethylene piping systems.

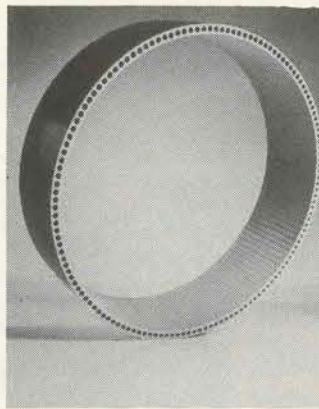
The good chemical resistance of PVC pipes, its re-

sistance to corrosion, light weight, easy jointing, smooth bore and therefore less resistance to flow of water, and longitudinal flexibility give PVC a unique combination of advantages, in addition to its low energy content in comparison with other piping materials.

Wavin's dominant position in servicing the construction industry has been maintained through a constant up-dating of production and its introduction of new products to meet the industry's needs. The company that was first to develop a plastic gulley trap and access junction has also kept ahead in other areas. Recently, it has researched and developed further products which it has added to its expanding range.

Wavin's Research Department has come up with a revolutionary new polyvinylchloride pipe. Combining structural and material dynamics, a series of cylindrical holes run longitudinally throughout the pipe wall. The result is a strong pipe of uniform

stiffness and with better shock resistance. It is jointed in the normal way and consequently is leak-proof. It is lighter and therefore easier to handle, and is up to 15% cheaper. It is undoubtedly the pipe of the future. Wavihol has been widely tested and used, and also has the French Avis Technic and Agrément SP certificate and the Dutch KOMO certificate.



• Wavihol polyvinylchloride pipe.

Whatever the conditions, from unstable soil, peat, heavy clay, rocky to firmer wet soil, Wavin has the system to carry out effective drainage. The new Wavin-

coil comes in continuous 200 metre coils and can be used with automated continuous fast moving drain layers, or it can be laid manually. It's so light that a man can easily carry a 200 metre coil single-handed. It is a corrugated PVC pipe perforated along its entire length, facilitating maximum drain-off of water. Its easily laid, easily cut and trenching widths can be kept to a minimum. It can in fact be used on all trenchless and trenching machines.

Wavincoil and Wavinflow can be used in conjunction with any soil condition. Already in service in Continental Europe, it also meets British and international government standard specifications.



Some months ago, the Marley technical design team, knowing the problems of builders working to schedule and faced with the task of matching waste outlets of various sizes to a trap which more often than not



All for one

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Outlet design simplifies connection to drain at any angle.



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The advantages of UNIDARE/TERRAIN solvent weld

Strength

Solvent weld is not a glue. It welds. And that means the joint is as strong as any other part of the system. Unlike rubber ring jointing it is virtually stress free.

Simplicity

Solvent weld means a soil stack can be pre-assembled. That means there is little on-site fixing to do. And that leads to speed and efficiency.

Fewer fittings

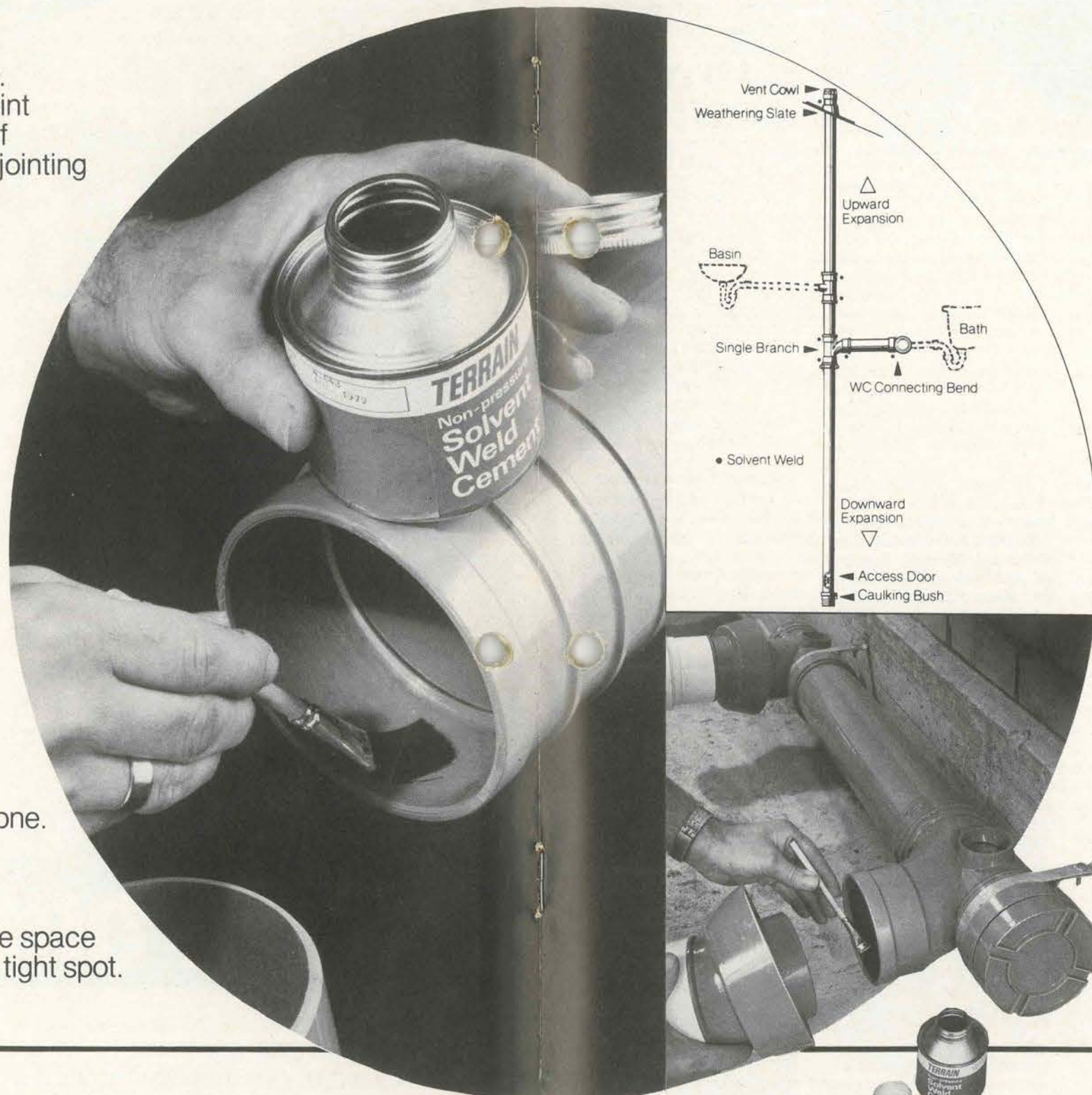
Six fittings and solvent weld can build a soil stack. That cuts down on fittings. And that simplifies the plumber's work.

Ease

Apart from fewer fittings, the job's much easier. Simply cut, clean, coat and assemble. And the job's done.

Compact

Solvent welded fittings are compact. And that means more space for the plumber when he's in a tight spot.



Versatile

There is a whole range of Terrain fittings to choose from. So a solvent welded stack is both economic and versatile.

Safety

Terrain solvent welded stacks provide controlled expansion. They're quiet too. So once the plumber's fixed it he can forget it.

Professional

Terrain themselves use solvent weld on their prefabricated stacks. 20 years' experience has shown them that it provides the best all round system. And it's well accepted by the specifier, installer and customer. Solvent weld is a professional technique. Work with solvent weld and be with the professionals!

UNIDARE TERRAIN



Unidare Limited
Unidare Works
Finglas Dublin II
Dublin 771801

PIPEWORK AND DRAINAGE

requires packing or other modifications on site, concentrated their efforts on perfecting a gully which could accommodate inlet pipes from 1 1/4" to 4" in diameter and with provision for height adjustment to suit ground or drain level.

The result of their labour is the revolutionary multi-purpose one-piece gully trap which has been specially designed in PVC to provide a fast, economical answer to the widest variety of on-site applications.

The complete one-piece gully, manufactured at the company's plant in Lucan, Co. Dublin, incorporates Boss upstands to suit waste, rainwater and drainage connections, with unique knock-out centres to simplify installation.

Some situations have traditionally required the use of a gully riser or other methods of making up the space between the top of the gully and ground level. With the "Universal" the need for a riser is eliminated by the "twin-socket" feature which allows the gully height to be increased by using an off-cut of 110mm pipe.

The twin-socket feature also allows the top section of the Universal to be swivelled, thus permitting the boss upstands to face in any desired direction, with or without height adjustments.

CPI/Marley also supply underground drainage pipes and fittings, rainwater systems in a range of profiles and sizes and complete soil and waste pipework systems for internal or external use.



Unidare Terrain Plastics

Unidare, one of Ireland's largest manufacturing companies, markets Terrain plastic systems for both soil and waste and rainwater applications.

The Terrain soil, waste, traps, waste outlets and overflow systems are all designed to meet the requirements of British Standards Specifications. Each system comprises a wide range of socketed fittings for use with plain ended pipe and



● CPI/Marley's new multi-purpose one-piece PVC gully trap.

solvent welded or seal ring joints. A range of fittings is provided for expansion joints to accommodate thermal movements, and there are accessories for connection to all other materials... CI, GVC, and plastics below-ground drainage.

The Terrain half-round or square uPVC rainwater systems are designed for efficient disposal of surface water from all low and high rise domestic buildings. The system comprises a wide range of spigot/socket fittings for use with plain ended pipe, and socketed gutter fittings for use with plain gutters. In addition, there is a range of fittings for connection to other materials. Both square and half-round rainwater systems are designed for on-site use.

Terrain also manufacture a variety of roof and balcony outlets in uPVC.

For further information contact, Unidare Limited, Jamestown Road, Finglas, Dublin 11. (Tel: 771801).

Cast Iron

Cast iron underground drain pipes, soil pipes and fittings are today recognised worldwide as essential for first-class drainage and soil systems. Their accepted use beneath buildings, where access to pipework is not possible and in conditions where structural strength is required or where heavy traffic vibration is encountered, is unrivalled and unmatched by any other pipework materi-

of the other time tested and coveted traditional qualities of cast iron.

Additionally, in terms of the expenditure in man hours, the new Timesaver system minimises the costly labour element through the accuracy and ease with which assemblies and joints can be made. The most modern foundry techniques have been employed in the manufacture of the pipes and fittings used in the system. All metal used in this system is produced to a higher trade of metal than the current requirements of BS 437, which has resulted in greater strength and improvement in the quality and finish of the product. In all, a significant step forward in the design of cast iron pipework and providing the necessary economies to counter less suitable pipework materials and their associated protection requirements.

The Timesaver system uses a split coupling incorporating a gasket made of synthetic rubber and bolted together using stainless steel bolts and nuts. The synthetic rubber, which conforms to BS 2494, is a material resistant to attacks from liquids and substances normally found in domestic drainage systems. A torque wrench is the recommended tool for use in tightening the stainless steel bolts. The couplings which will then provide a permanent seal to the installation.

The Timesaver 437 drain system is available in 100mm and 150mm diameters and where larger pipe diameters are required for underground drainage 200mm Timesaver is available with a limited range of fittings. 100mm and 150mm pipes are centrifugally cast in lengths up to 3 metres long and 200mm 5.5m long. As pipes are double spigoted, off-cuts can all be used and thus minimise waste. Other components, ie bends, branches, access pipes and other terminal fittings are spigoted to complement the system and to complete the range.

(The above was written by Tom Berry, Sales Director of Tonge & Taggart Ltd.).

Concrete

Concrete Pipes Ltd. supply products for the complete range of underground pipework from land drainage, domestic drainage as well as main drainage and sewerage schemes. In addition to the main works at Naas there are plants at Mungret, Co Limerick, and Ballisodare, Co. Sligo.

Flexible joint pipes with (G) tear shaped joint rings are manufactured up to 1800mm to comply with BS 556, together with junctions, splays, channels, bends and saddles.

In addition to street gullies and deep manholes, Concrete Pipes supply the Davron range of precast concrete manholes, house inspection chambers, and septic tanks as well as the Davron long length flexible pipe jointing equipment.

Further details from Concrete Pipes Ltd, Maudling Works, Naas, Co. Kildare, (Tel: 045 9353).

Vitrified Clay

Flemings Fireclays Ltd, the largest manufacturers in Ireland of vitrified clay sewer pipes, have now increased the range of diameters available. In conjunction with the Hepworth group of England, who are the largest vitrified clay pipe manufacturers in the world, they are now able to supply pipes up to 800mm in diameter. In the very near future the range will be extended to include both 900 and 1,000mm diameters.

These large diameter

pipes are available in lengths of up to 3 metres which is a far distant cry from the days of the one yard lengths of earthenware pipes. The large diameter pipes comply in all respects with the test requirements of BS 65 and 540 Part 1 1971 and the flexible joints meet all the functional requirements of BS 65 and 540 Part 2 1972. The whole range is in all ways capable of satisfying the relevant requirements of BS Code of Practice 2005 1968. The range of diameters now available is 100, 150, 225, 300, 400, 450, 600, 700 and 800mm.

Since the ancient times vitrified clay has been accepted as a material which neither time nor the elements could corrode. Archaeological expeditions have unearthed pipes buried in aggressive soils for thousands of years and yet in good condition as the day they were laid. Those were

pipes of vitrified clay which had withstood the test of time. Today the durability of vitrified clay is unquestioned and its proven reliability places it on its own when it comes to choosing a material which is ideal for the conveyance of a wide range of industrial and domestic effluents. This is confirmed in the construction scene of today where one can see clay pipes in constant use throughout the country whether it be a local authority housing contract or a vast complex chemical plant. The recently completed Wilton Hospital in Cork and the present Beaumont Hospital under construction have vitrified clay sewerage pipes installed.

Full technical literature in relation to clay pipes is available on request from Flemings Fireclays Ltd, The Swan, Athy, Co. Kildare. (Tel: 0507 25513, Telex: 33005).

PIPEWORK AND DRAINAGE

Pitch Fibre

Cape Insulations (Ireland) Ltd, supply Union snap joint and tapered joint pitch fibre pipe systems for surface water or soil drainage schemes, both complying with BS 2760: 1973.

The two systems can be connected together using unequal junctions or level invert tapers, and can also be jointed to drainage installations in other materials.

Union perforated pipes are also available and are suitable for most sub-soil drainage schemes including road, motorway and railway track drainage.

Asbestos Cement

Tegral Pipes Ltd. manufacture in Drogheda a complete range of asbestos cement water pipes to BS 486 and sewerage and drainage pipes to BS 3656. The pipe sizes range from the smaller diameter 4", 6", and 8" through to the larger diameter 21", 24" and 30".

Tegral pipes are used in servicing housing and industrial site developments. The 6", 9" and 12" sewerage pipe has proved very popular on sites, being 4 metres long, light, and easy to joint. These characteristics give significant efficiencies in laying and testing. The water pressure pipe is used in sizes 4", 6", 10" and 12" coming in 4 metre lengths and in class 15, 20, and 25 bars. Tegral's high pressure water pipe is universally used for fire main connections to factories.



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HEAT RECOVERY

This is the second in a series of articles on the utilisation of heat from the high pressure side of a refrigeration system and was written by Ole Larsen B.Sc., who is an engineer with Danfoss Ltd.

UTILISATION OF HEAT FROM HIGH PRESSURE SIDE OF REFRIGERATION SYSTEMS PART 2

Planning of heat recovery systems

Quite a number of heat recovery systems have been installed at the present time, both in the commercial sector (supermarkets, etc.) and in the industrial sector (e.g. slaughterhouses). However, it is not everywhere that the system works quite as intended, which is, as a rule, due to the fact that a sufficiently thorough analysis has not been made of the conditions which are of importance to the economy and sizing of the systems. The prerequisites of a heat recovery system are consumption of cold and consumption of heat. If these consumptions do not occur at the same time, there will also be a need for heat accumulation.

4.1 Refrigeration system condenser output

The condenser output, and hence the possibility of heat recovery, depend on the cold output of the refrigeration system and the mechanical work supplied.

The following factors are of importance to the cold output:

- The air change taking place through open doors, etc.
- The heat from fans, lighting, elect-

ric motors, people, etc.

— Sensible and latent heat from the cooled provisions.

The relative humidity of the air, the wind force, and the sun ingress are important factors when the heat supply through transmission and radiation is to be calculated. This part of the heat supply will, generally, be of a small size in the winter time. In some cases, even neutral or negative.

The prerequisites of a heat recovery system are consumption of cold and consumption of heat. If these consumptions do not occur at the same time, there will also be a need for heat accumulation.

THE OUTPUT OF THE REFRIGERATION SYSTEM FANS DEPENDS ON THE OPERATING PERIOD OF THE EVAPORATOR

The heat supplied through open doors depends on the following factors:

- The positions of the doors (leading into the open or to other rooms).
- For how long a time the doors are open.
- Whether special precautions have been taken to prevent an excessive air change; for example, in the form of air curtains or revolving doors.

The output of the refrigeration system fans depend on the operating period of the evaporator and will, therefore, usually be lowest in winter.

The heat emitted by lighting, electric motors, persons, etc., will often be limited to normal daytime working hours, and it can be in some cases be dependent on the time of the year.

As regards the heat from cooled provisions, it may also be subject to large variations both within the 24 hours of the day and within the year.

An example which can be mentioned is a slaughterhouse with maximum load in the daytime and early in the evening, while the load decreases heavily late in the night when the cooling of the meat is almost complet-

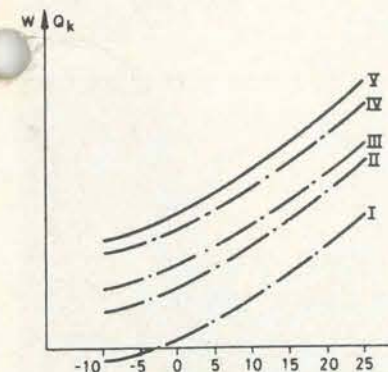
ed, but on an annual basis, the variations are not very large. If, on the other hand, it is a matter of cooling and freezing of typical seasonal goods such as berries, fruit, and other vegetable products, large variations may occur in these systems on an annual basis.

The input from the electric compressor motor depends on the operating time of the refrigeration system, and on the pressure conditions in the system. Normally, the input will, therefore, be lowest in winter.

To determine the power supplied, it is necessary to assume that part of the input will be converted into heat in the electric motor and emitted to the surroundings. From a purely practical point of view, the power supplied to the refrigeration system can be put 0.7 time the input from the mains supply.

A curve showing the condenser output relative to the outdoor temperature can be traced for every single refrigeration system on the basis of the analysis. The curve can be, for example, as shown in fig. 9. However, the load will in many instances fluctuate so much that it will be more correct to make a curve for maximum load and one for minimum load respectively of the refrigeration system (fig. 10).

I: Transmission heat
II: Exchange of air
III: Ventilators, light, staff, etc.
IV: Chilling of goods
V: Engine heat

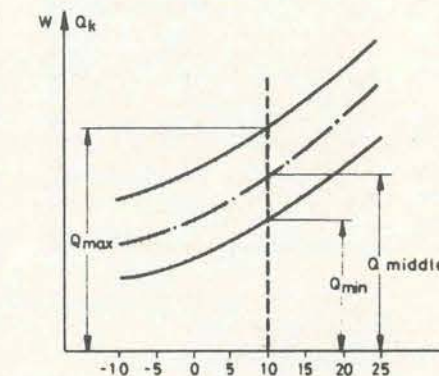


The condenser output within the single 24 hours can also be examined at different outdoor temperatures. At an outdoor temperature of +10°C the condenser output within 24 hours can, for example, look as shown in fig. 11.

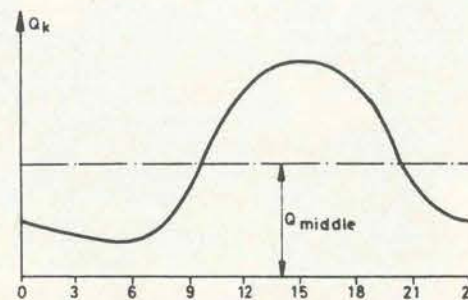
4.2 Heat consumption analysis

If it is desired to analyse the heat recovery possibilities in the refrigeration system, it will, of course, also be necessary to analyse the heat con-

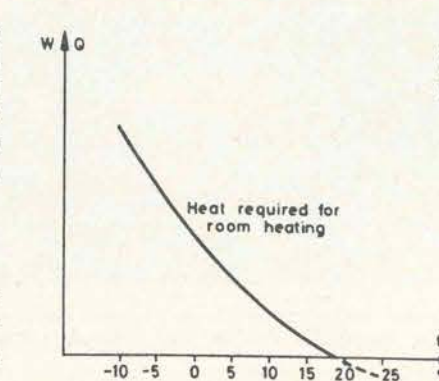
sumption, no matter whether it is for room heating, water heating or process heat of one kind or the other. Only then will it be possible to determine the type of system which will give the proper combination of maximum heat recovery and optimum economy.



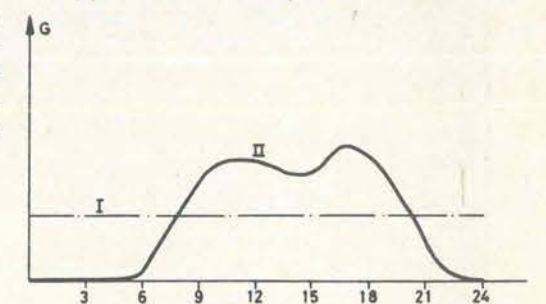
The need for room heating increases when the outdoor temperature falls, e.g. as shown in fig. 12, while the consumption of hot water is, normally, independent of the outdoor temperature (fig. 13).



Similarly, there will also be variations within the single 24 hours, which is, normally, not taken into account in the case of room heating; however, with the exception of cases where night set-back of the room temperature is used. On the other hand, it can be necessary in the case of water heating to examine the variations within the 24 hours in order to determine the size of an accumulation tank if required.

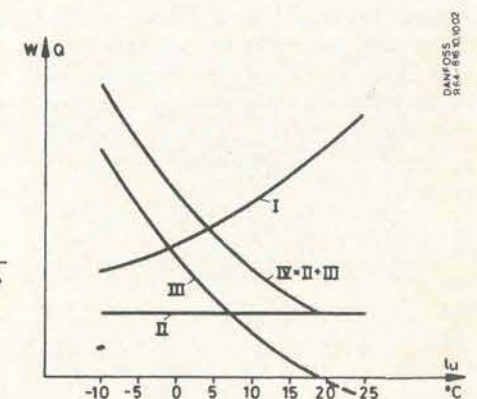


I: Average consumption of hot water per day dependent on the temperature outside.
II: Daily variations in consumption of hot water.



4.3 Summary

The analyses described in the foregoing form the real and quite indispensable foundation on which to base one's considerations. What it is actually all about is to have a general view of heat supply and heat demand, to be able in this way to set up the combinations which seem attractive. Not only the amounts of heat are of interest, but — to a high degree — also the temperature level required. A general reduction of both water and room temperatures will, probably, be experienced in this connection.



I: Condenser capacity
II: Hot water consumption
III: Room heating

4.4. Economy of heat recovery system

On the basis of the above-mentioned analyses of the condenser output and the different heating requirements it is possible to trade a diagram (fig. 14) which offers a general view of the different technical possibilities of heat recovery from the refrigeration system.

However, one of the prerequisites of establishing a heat recovery system is normally that the annual net saving on the energy consumption is larger than the annual operating expenditure, also including payment of interest and depreciation of the investment.

Instead of holding their Annual Dinner in Quenns University Great Hall, the Institution of Mechanical Engineers decided this year to try the less academic atmosphere of the Culloden Hotel.

A graphic featuring the word "US" in large, bold, orange letters, with "NEWS" repeated in a smaller, black, sans-serif font in the background.

Stanley Ferguson, chairman of the N.I. Branch of the C.I.B.S. took the chair at the Annual Dinner of the Branch.

The dinner, held in the Colloden Hotel, had its usual maximum support with all sections of the trade being represented. Guests included architects, leaders of industry and of course a large cross-section of local and Government officials.

The "official" party included the President of the Master Plumbers Association, the President of the R.S.U.A. and the Chairman of the Institute of Energy.

Guest speaker was Mr Walter Love, the well-known B.B.C. presenter.

More than 50 representatives of the heating trade, including merchants and contractors, joined together to enjoy the delights of Jersey in the Channel Islands as the guests of Thorn Heating Ltd.

Continuing the promotion of the "Panda" range of boilers which has helped Thorn obtain 20% of the Northern Ireland market, the trip was organised locally by the Philip Johnston area manager and the party was hosted by Mr J. Sweet (Managing Director).

Other personalities attending included Mr Ray Barrett, Marketing Manager, the redoubtable Mr Ed Martin, Northern Sales Manager and Mr Syd Taylor, Publicity Manager.

It was announced that by the autumn of the next year, Thorn would have a solid fuel boiler, which should prove a welcome addition to the solid fuel market.

In furtherance of their campaign of the economic benefits of C.H.P./



● Pictured at the CIBS annual dinner were (from L-R) J. Gura; T. Stewart, (Pres. of Master Plumbers); V. Robinson (Pres. of R.S.U.A.); T. O'Hara; and S. Ferguson (Chairman — N.I. C.I.B.S.).



● At the Northern Ireland branch of the CIBS annual dinner were (L-R) S. McEwan (N.I. Sec. CIBS); M. McDonagh; W. Love (BBC); R. Jordan (Chairman — I of E); and S. Holmes (NITE).

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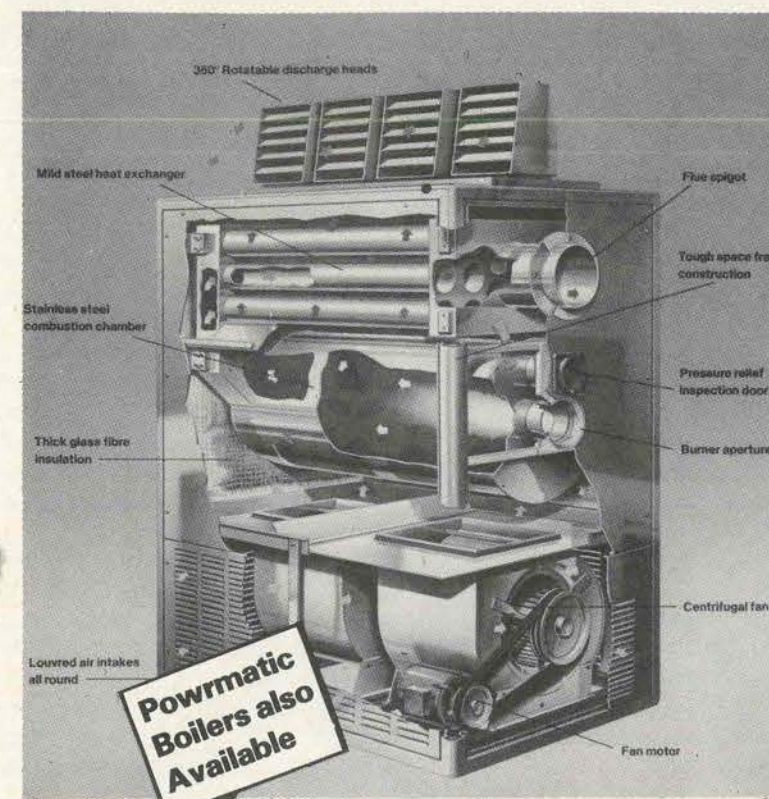
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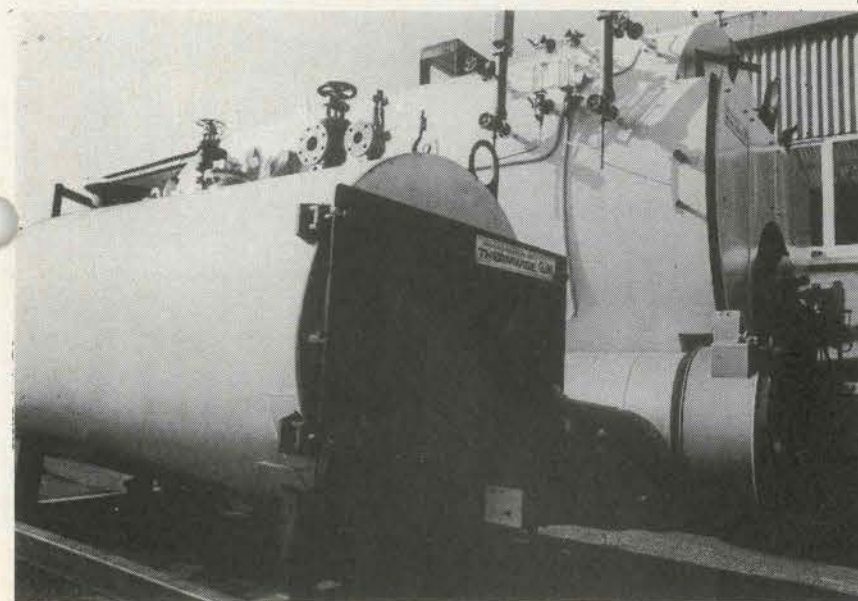
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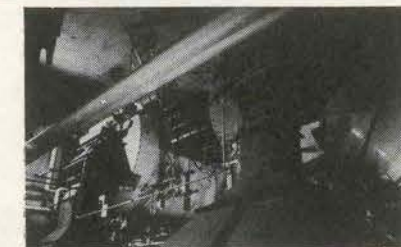
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*L.P.G. boiler installed in metal spinner
Newtownmountkennedy.*



The success of the function was never in doubt from the moment of the arrival of the first guest to be received by the N.I. Chairman, Mr. Charles Hicks.

Mr. Hicks had the pleasure of welcoming among the guests the President of the Institute, Mr C. Heldrew and his wife, who, the following day, were to attend the annual dinner of the Southern Branch.

Following the serious speeches, Mr John Scott, Chairman of the N.I. Branch of the Institute of Civil Engineers, brought the evening to a close with an excellent witting speech, expressing the thanks of the guests.

Engineering was well represented among the N.I. recipients in the New Years Honours list, with the Managing Director of Short Bros. & Harland Ltd, Dr. Philip Foreman receiving a Knighthood.

Mr. V. A. Cooke, Chairman of Henry R. Ayton Ltd with offices in Dublin and Belfast received the Order of the British Empire.

Satchwell Sunvic of Motherwell & Slough have appointed Mr. R. Malloy, Sales Engineer for Scotland and Ireland. Mr Malloy will be based in Scotland.

Mr. Peter Shaw, an architect with Building Designs Partnerships has been appointed Manager of their new Derry office.

Mr. Shaw has been with B.D.P. for some years and did his training at the Edinburgh College of Art School of Architecture.

Mr. Bernard Wright, National President of the Heating and Ventilating Contractors Association was the special guest of the Northern Ireland Region at their lunch at the Drumleer Hotel.

Mr. Wright was welcomed by the N.I. Chairman, Mr George Stewart,

also welcomed was Mr. Geoffrey Cutting, Director of the H.V.C.A. Arrangements for the function were carried out by Mrs. Myrtle Huntley, N.I. Regional Secretary.

The air conditioning products division of Toshiba (U.K.) Ltd have appointed B.L. Refrigeration & Air Conditioning Ltd of Albertbridge Road, Belfast to be their N.I. distributors.

Euroweld Ltd the Belfast Harbour based engineering firm announce that its share capital has been taken over by Irish Bridge Ltd.

The company, which specialises in the construction of pressure vessels particularly for the L.P.G. and chemical industry announced redundancies just before Christmas, some time rumours have been circulating as to the companys future.

The action of Irish Bridge means a break in the connection with the American company P.X. Nuclear Ltd who previously controlled the company.

Irish Bridge is a privately owned group of companies who have had outstanding success in the North Sea "off-shore" market and more recently they have completed a number of



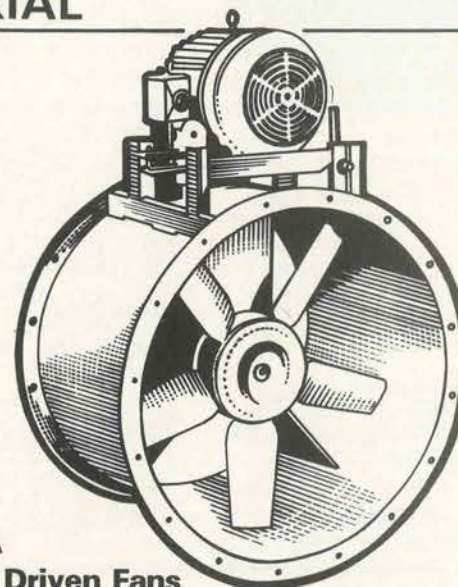
● (L-R): L. Kane, M. Buckley, B. Hunter, G. Kent, G. Stewart all attended the CIBS (Northern Ireland Branch) annual dinner.

major installations in Ireland. The four divisions of the company are, Irish Bridge Offshore specialising in off-shore work, Irish Bridge Energy involved in gas and oil exploration, Irish Bridge Teoranta for Eire projects and Irish Bridge Northern Ireland. At present employing 250 people Euroweld recently completed a major extension and is ideally suitable to make a major impact on the U.K. and European pressure vessel market.

Industrial Fan & Blower Co. (Ireland) Ltd.

Present their **INFANCO** Range of Fans

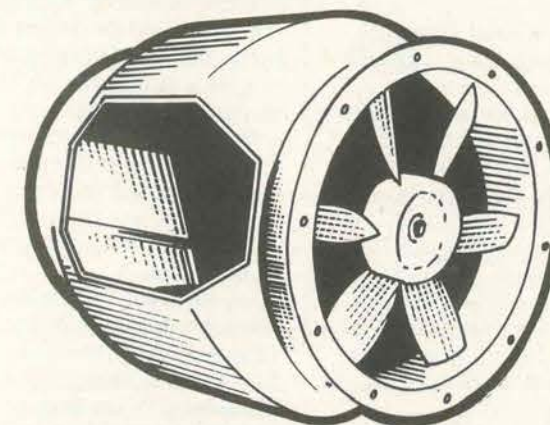
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Ten fan sizes 300 - 1500 mm for contaminated or inflammable air streams.



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Requirements of the Fireplace and Efficiencies

The Solid Fuel Advisory Service in the UK have recently issued the following guidelines for fireplaces which are equally applicable in Ireland.

Constructional Hearth:

The constructional hearth is a slab of concrete forming a barrier between the fire and combustible parts of the house such as the joists and floorboards. It must be 127mm (5") thick and extend not less than 508mm (20") beyond the front of the chimney breast and a minimum of 153mm (6") beyond each side of the builder's opening.

Superimposed Hearth:

This is a decorative hearth manufactured from ceramic tiles, brick, natural stone or other non-combustible material and placed on top of the constructional hearth. It must be no less than 48mm (1 7/8") thick and must project into the room sufficiently to extend to a minimum 304mm (12") distance in front of an open fire or roomheater.

Back Hearth: This fills in the height difference between the constructional hearth and the superimposed hearth. It must be level with the superimposed hearth and made with a mix of 4 parts sharp sand to 1 part cement mixed with water. A strip of asbestos rope must be placed between the back hearth and superimposed hearth to create an expansion joint. The mix must be allowed to harden before the fireback is positioned.

Size of Flue Required: Of necessity there must be a relationship between the area of the fireplace opening and the cross

shaft. This should not exceed a ratio of 6:1. The following example indicates how this is arrived at:

A fireplace with an opening width of 460mm (18"), should be multiplied by its height 560mm (22"), to give a total area of 2567 sq.cm (396 sq.ins).

Working on the ratio 6:1, this area of fireplace opening would require a flue of not less than 2576 sq.cm ÷ 6 = 430 sq.cm = 66 sq.ins.

Sizes of Flues Available: Most houses built before 1966 are likely to have a flue shaft 229mm (9") by 229mm (9"), an area of 524.41 sq.cm (81 sq.ins). Houses built after 1966

generally have a flue liner which may be round or square within the chimney shaft. Its cross sectional area must be worked out to ensure whether it is of suitable size for any given fire-opening.

Maintenance: It is recommended that the chimney be swept at least annually. A chimney sweep will also be able to tell the size and advise of the condition of a chimney.

Throating: A point that needs consideration is the outlets from the fire opening to the chimney shaft, generally called the "throating" of the fire. There are right and wrong

methods of throat construction to ensure a smooth passage for the smoke from the fire grate to the chimney, whether a firebasket or inset open fire is to be installed.

The efficiency of an heating appliance is defined as the ratio of heat produced in relation to the total energy worth the fuel expended. Its true efficiency is the sum of the components — water heating plus radiated heat plus convected heat.

With a coal fire, the heat emitted from the chimney flue through the fabric of the chimney breast into the rooms

through which it passes must also be taken into account.

The more highly controllable the fire, the greater the efficiencies attainable. However, evaluation of the efficiency of a fire alone can be misleading, for example a powerful radiant heat source creates comfort conditions that cannot be measured adequately in terms of efficiency.

It should be remembered that while an electric fire can work at an efficiency of 100%, in the process of generation and transmission of the necessary electricity, some 60% of efficiency has been lost making electricity comparable in efficiency to other fuels.

Some typical solid fuel efficiencies:

Open fire without boiler: Burning coal 26%; Chimney gain 4%; Total 30%.

Burning Smokeless Coal 37%; Chimney gain 3%; Total 40%.

(Note: The installation of a throat restrictor will

increase space heating gains from the appliance by some 2 to 3%).

Open fire with domestic boiler

Burning coal 37%; Chimney gain 3%; Total 40%.

Burning Smokeless Coal 47%; Chimney gain 3%; Total 50%.

Open fire with high output boiler

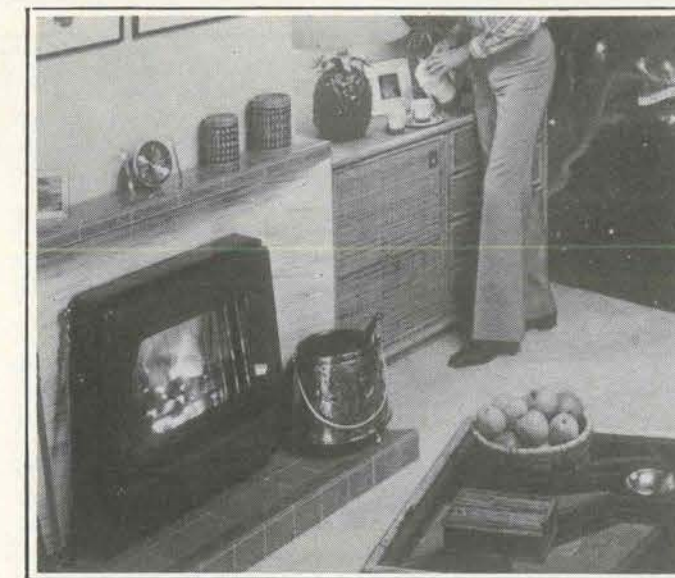
Burning coal 47%;

Chimney gain 3%; Total 50%.

Burning smokeless coal 57%; Chimney gain 3%; Total 60%.

(Note: There are many appliances in this category the best of which exceeds 70% but figures shown are typical average operating efficiencies and assuming some throat restriction).

Exempted openable roomheater (Rayburn



One of the many new Parkray "stars".

Prince 76)

Burning coal (smokelessly) Open 50%; Chimney gain 5%; Total 55%.

Closed 55%; Chimney gain 5%; Total 60%.

(Note: This appliance gives a higher flue gas temperature than open fires with a consequent increase in chimney gain).

Roomheater without boiler

Burning smokeless coal 60%; Chimney gain 5%; Total 65%.

Roomheater with boiler

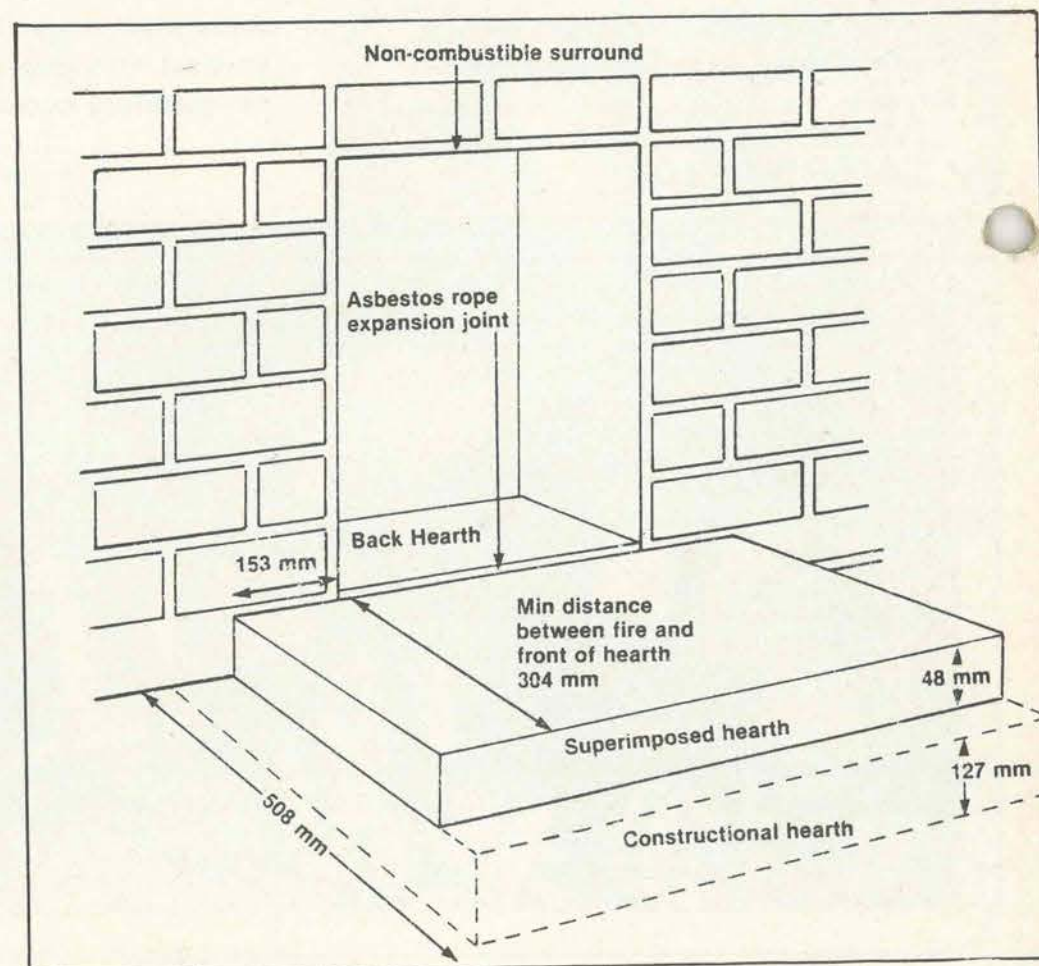
Burning coal (smokelessly) 65%; Chimney gain 5%; Total 70%.

Burning smokeless coal 70%; Chimney gain 5%; Total 75%.

Independent boiler

Burning smokeless coal 65%; Total 65%. Burning small anthracite 75%; Total 75%.

(Note: No credit is given to independent boilers for casing or chimney heat gain, although in fact a typical installation with a cast iron flue pipe connection may provide up to about 1kW of extra warmth to the kitchen).

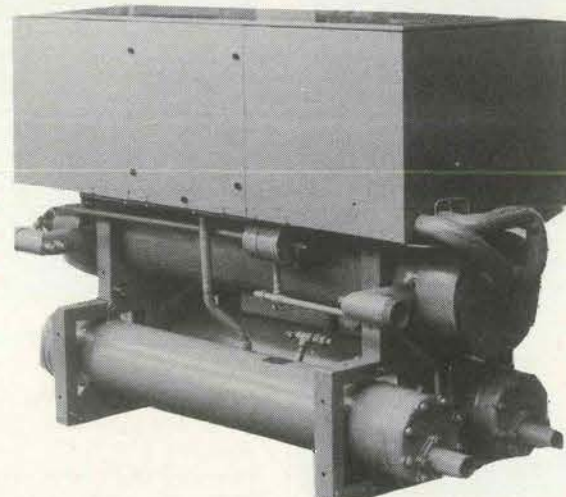


WHO REPRESENTS WHOM? 1981

The publishers of the IRISH ELECTRICAL INDUSTRIES REVIEW are compiling a directory of manufacturers, agents and distributors in the electrical trade. Its lists of suppliers of electrical goods to the market in Ireland will make this yearbook a valuable reference work for wholesalers, retailers and contractors alike. Questionnaires have already been distributed to principals, agents and distributors and these should be returned immediately. Additional copies of the questionnaire may be had on application to:

Who Represents Whom?, Irish Trade & Technical Publications Ltd., 5/7 Main Street, Blackrock, Co. Dublin, (Tel: 885001). THERE IS NO CHARGE FOR LISTINGS IN WHO REPRESENTS WHOM?

NEW PRODUCTS



● The photograph shows the Carlyle Heat Machine from Walker Air Conditioning.

"HEAT MACHINE" FROM WALKER

A new family of Carlyle energy-saving heat reclaim machines capable of extracting waste heat from any source of warm water for use in heating commercial and industrial buildings is now available from Walker Air Conditioning Ltd.

The new product, called the Heat Machine, is capable of delivering up to 6 kW of heat output for every 1kW of electric input, thereby offering significant energy and cost savings over conventional oil, gas or electrical boilers.

The Heat Machine operates by removing heat from medium temperature water (10°C to 45°C) and through use of a refrigeration cycle, raising its temperature to usable levels (50°C to 70°C). Typical water sources include pond water, condenser water from other refrigeration machinery, waste water from industrial processes or waste water from dishwashers in hotels and restaurants.

C.O.P.'s of up to 6.0 are readily achievable. Unlike

air-to-air heat pumps, there is no degradation of C.O.P. used by drops in outdoor air temperature.

The new machine can replace conventional boilers in many installations. Because it produces higher water temperatures than standard heat reclaim systems, existing fan coils, radiators and air handlers can be used in most retrofit application.

The system can be used for comfort heating, wet process heating and as an adjunct to solar heating. In summer, the machine can produce chilled water for air conditioning. In some applications, the machine is capable of simultaneously producing hot water for heating and chilled water for air conditioning.

Available in 17 sizes with heating capacities ranging from 50kW to 1050kW, the machine uses standard Carrier components. There is no exotic hardware or unproven devices, thereby reducing the possibility of parts problems.

LOW COST pH METER

EIL Analytical Instruments, the water analysis specialists of Kent Industrial Measurements, has recently introduced a low cost pH meter, Model 7015, to their range of laboratory instruments.

Model 7015 is compact, easy to read and simple to use, with calibration, temperature and slope controls on the front panel for easy access. The 0-14pH analogue scale is also calibrated for millivolt readings, for

use in redox titrations. A robust BNC socket eliminates meter failure due to input socket breakdown resulting from frequent connection and disconnection of electrodes.

Model 7015 is a mains

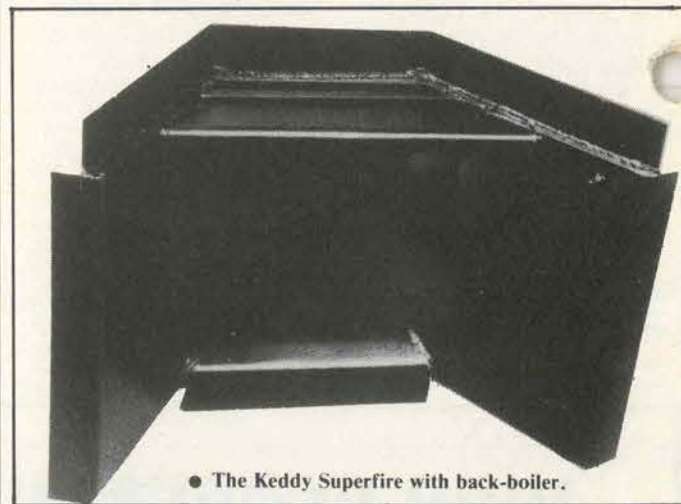
CENTAIR CONTROLS

The Centair pneumatic range has been specifically designed for heating, ventilating and air-conditioning plant control by Sauter Automation Ltd.

The controllers are suitable for surface mounting or flush panel applications which allows easy maintenance on site. Single or multi-input units are available which work on a leverless diaphragm principle, constructed in a miniaturised system having independent elements for each

control function. Control actions include proportional (P), proportional plus integral (PI) and P + PI cascade control, giving full adjustment of the P band, integral action time, schedule and authority, limit values and remote set points. Gauges can be incorporated in the cases to give readings of the measured value and output conditions.

Sauter products are available from Dwell Controls Ltd.



● The Keddy Superfire with back-boiler.

KEDDY SUPERFIRE WITH BACKBOILER

Keddy have added a back-boiler option to the Keddy Superfire. The backboiler version of the Superfire is made in 6mm thick steel plate and conforms to BS 3377 and has two hot water outlets and two inlets, all for 1" diameter pipe. Each backboiler is tested at 80 psi and is guaranteed for five years. The Keddy backboiler features a twin flueway system which maximises the surface exposed to heat and gives the boiler a potential

of 8KW output, plus a further 2KW in radiators. Like all Keddy fireplaces the air supply is drawn from outside the room in which the fireplace is sited to ensure good combustion of all solid fuels, and the elimination of unwanted draughts. The raised hearth also prevents "cold feet" in the sitting room.

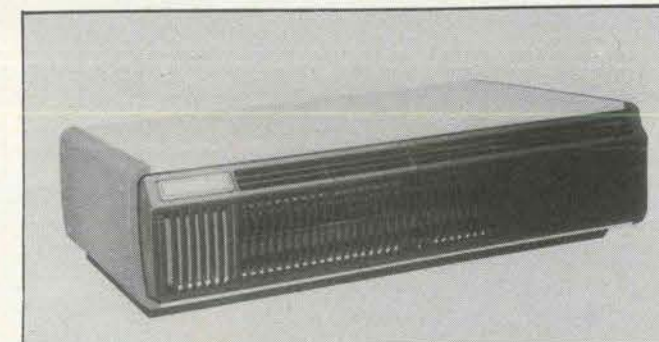
Keddy stockists are C. P. Glorney Ltd, Liffy Bank, Dublin 8.

TOSHIBA'S FOUR "SPLITS"

Four room air conditioning systems to be introduced by Toshiba Air Conditioning Products Division in Spring, 1981, will be the first one shot coupling units added to the company's range. The newcomers are the RAS-45YCE and RAS-60YCE ceiling-mounted split systems and the RAS-45YFE and RAS-60YFE floor-standing splits. All four operate from single-phase 220/240 volts 50 Hz mains power. Supplied pre-charged with refrigerant, the systems are designed for ease of installation. Pre-charged piping kits are available in 5, 10 and 15 metre lengths.

Both the ceiling and floor-standing RAS-45 systems have a cooling capacity of 4,500 kcal/h (18,000 btu/h), moisture removal of 3 litres/hour and air circulation capacity of 820 m³/h.

Cooling capacity of the two RAS-60 systems is also



● One of two new ceiling-mounted split systems from Toshiba Air Conditioning Products Division, the RAS-60YCE has a cooling capacity of 6,000 kcal/h (24,000 btu/h). It is one of the first one-shot coupling systems from Toshiba.

identical at 6,000 kcal/h (24,000 btu/h), and both have a moisture removal rate of 3.7 litres/hour and air circulation capacity of 1,050 m³/h.

An electric heater with 2,233 kcal/h (8,533 btu/h) heating capacity is offered as an optional extra with all four systems.

For further information on the new systems, contact Toshiba's distributors: Republic of Ireland: Saireco

Limited, 60 Fitzwilliam Sq., Dublin 2, (Tel: Dublin 763842). Northern Ireland: B L Refrigeration & Air Conditioning Ltd, 151 Albertbridge Road, Belfast 5, (Tel: Belfast 53325).

CONTROLLER FROM COOLAIR

A Microprocessor Controller the MPC-8901, which can be programmed to

automatically adjust a building's exact energy needs and so reduce operating costs, has recently been introduced into Ireland. Manufactured by Barber & Colman and distributed by Coolair Limited, it has been designed to increase operating efficiencies and save energy by providing automatic starting and stopping of mechanical and HVAC equipment. Programmed to operate equipment only when necessary, the new Controller has a 24-hour clock and 365-day calendar, understands long weekend and holiday schedules and also caters for daily variations. The Barber & Colman unit reduces KW demand and KWH usage, provides a continuous power monitoring of building service and includes instrumentation to display such data as time-of-day and day-of-year. It incorporates Solid State electronics and four software programmes to achieve maximum optimization of electrical and mechanical systems.

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NEW PRODUCTS

Wolf Klimatechnik Products

Wolf Klimatechnik Air Handling Units available in ten sizes up to 100,000m³/hr (59,000 cfm) fulfill every demand of modern ventilation systems.

The KG AH-Unit range is designed for easy "mix and match" of the available modules as fan, filter, mixing, heating, cooling or washer section to suit every requirement.

Fans can be with either forward or backward facing curved impeller blades. Cassette or bag filters are available in various specification to suit demand. Filter sections can be combined with mixing or exhaust air sections and dampers. Heating coils, easily removable, can be selected for LPHW or Steam operation. The washer section can be delivered in stainless steel or GRP construction.



• Weatherproof construction.



• Wolf modular air handling unit up to 100,000 m³/hr.

Sound level control is achieved with attenuators which are also part of the Wolf KG AH-Unit System.

Supply and exhaust entries can be positioned to suit individual installations. Each section is insulated with abrasion resistant mineral wool to avoid heat loss or noise transmission. Units for external mounting are in weather-proof design. All units are available in double skinned construction on request.

Detachable panels and doors allow access for inspection and servicing. The final finish is in water and temperature resistant enamel.

Wolf Klimatechnik employ 600 craftsmen and provide full customer service throughout Europe. Installations in Ireland to date include: Co-ops, supermarkets, factories, studios, laboratories, restaurants, commercial building, swimming pools, hotels, etc.

Heat Recovery Ireland Ltd. distributes Wolf Klimatechnik Systems in Ireland — for advice and information call Macroom 359, Macroom, Co. Cork.

VELOCITY MONITOR

The Edralarm is the latest instrument to emerge from the technical team at Air-flow Developments Ltd. This device is a permanent air flow monitoring anemometer which, when connected to a suitable alarm, will give a visual/audible warning immediately the pre-set velocity limit is passed.

Edralarm has been designed primarily for chemical and medical laboratories and can be used in clean-rooms, fume-cupboards, glove-boxes, etc, where air flow in a known direction exists. It is also ideal for applications where a high standard of ventilation control needs to be maintained to comply with Health and Safety at Work Acts.

The instrument runs from a 240V mains supply and is available in two analogue versions suitable for velocity ranges 0.25 - 1.25 m/s (50 - 250 ft/min) and 0.25 - 10 m/s (50 - 2000 ft/min).

Further information from: McKenna Ireland Ltd, Ardee House, Blanchardstown, Dublin, (Tel: 213988 Telex: 25671).

NEWS EXTRA

New Taney Agencies

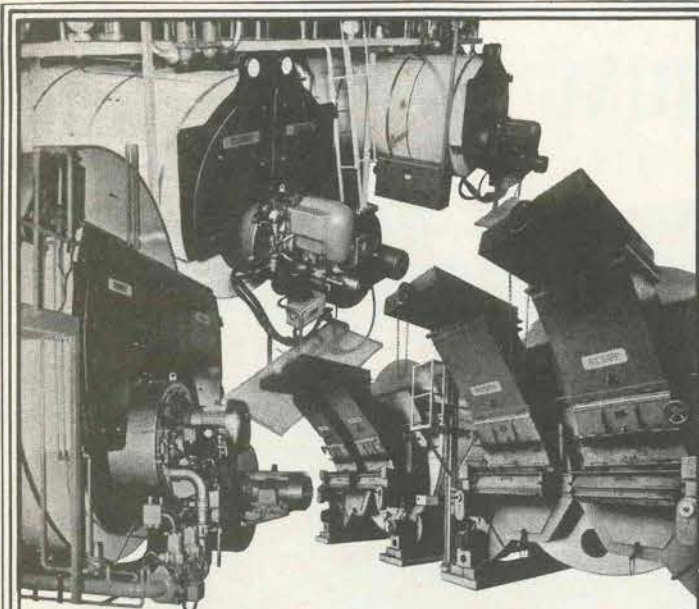
Taney Distributors have been recently appointed agents in Ireland for Benraad Ltd., of Terborg, Holland. Benraad manufacture a range of domestic and industrial balanced flue heaters and a full range of industrial blow warm air heaters suitable for Propane or Natural gas. Both ranges of heaters have been fully approved by Calor Kosangas Ltd., and are now available ex Dublin stock at extremely competitive prices. Details of the range of heaters available are as follows: Benraad balanced wall heaters: From 7,200 Btu/hr to 36,000 Btu/hr. Benraad warm air heaters: From 40,000 Btu/hr to 340,000 Btu/hr.

Taney Distributors have

also been appointed sole distributors in Ireland for the Aga and Rayburn range of heating appliances. Mr. Andy Kavanagh, who has considerable experience in the solid fuel business will be responsible for the promotion and development of this market.

Rayburn have a complete range of heating appliances including the: Rayburn 80 series, Rayburn Rhapsody, Rayburn 70 series, Rayburn No 4 series, Rayburn Prince 76 series, and the Rayburn Super Series.

They also have a range of open fires including the: Rayburn Open Fire, The Lexham Fire, The Sofono Full View Fire, and the Lowburn Fire.



Robey Reliability

When reliability and quality are required Robey are chosen again and again.

"In most instances your early delivery requirements for packaged boilers can be met from our extensive stock programme."

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ROBEY

A Newell Dunford Company

S.L. Combustion Services Ltd.,

Laherdane, Ballyvolane, Cork. Tel: Cork 501411.

S.L. Combustion Services Ltd.,

158 Castlereagh Rd., Belfast BT5 5FT. Tel: Belfast 59282.

A Condensed Guide to MANOTHERM activities

THOMMEN CALIBRATOR EM

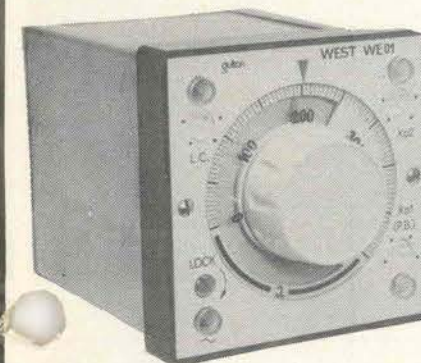


Type EM 421
410 x 260 x 230 mm
approx. 8 kg

p. from mains Separate power supply 24V D.C.



West WE 01 process controller



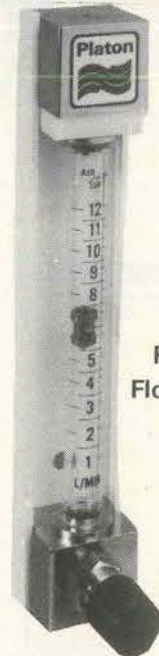
96mm square metal case.

PD+PI control action.

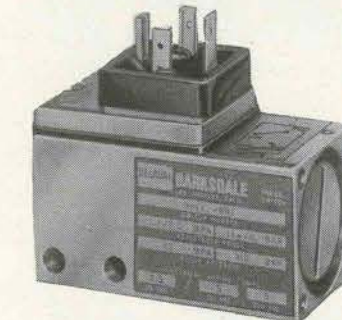
Limit comparator & controlling output option.



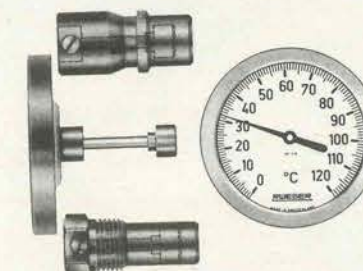
Dwyer
LOW PRESSURE
CONTROLS AND GAUGES



Platon
Flowmeter.



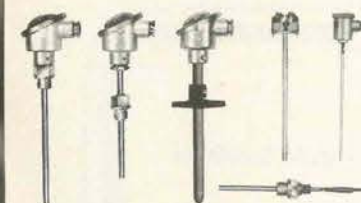
Barksdale piston pressure switch
for pressures up to 315 bar.



Rueger thermometers.



Platon 'M'—valve.
Air operated miniature
control valve
for automatic
control of
most media.



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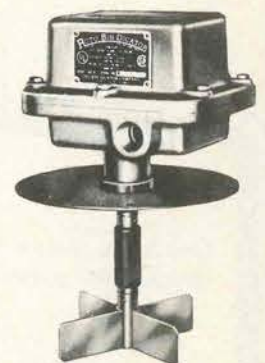
THE CONTROL CENTRES

4 WALKINSTOWN ROAD, DUBLIN 12

Phone: 522355, 522018, 522229. Telex: 24467

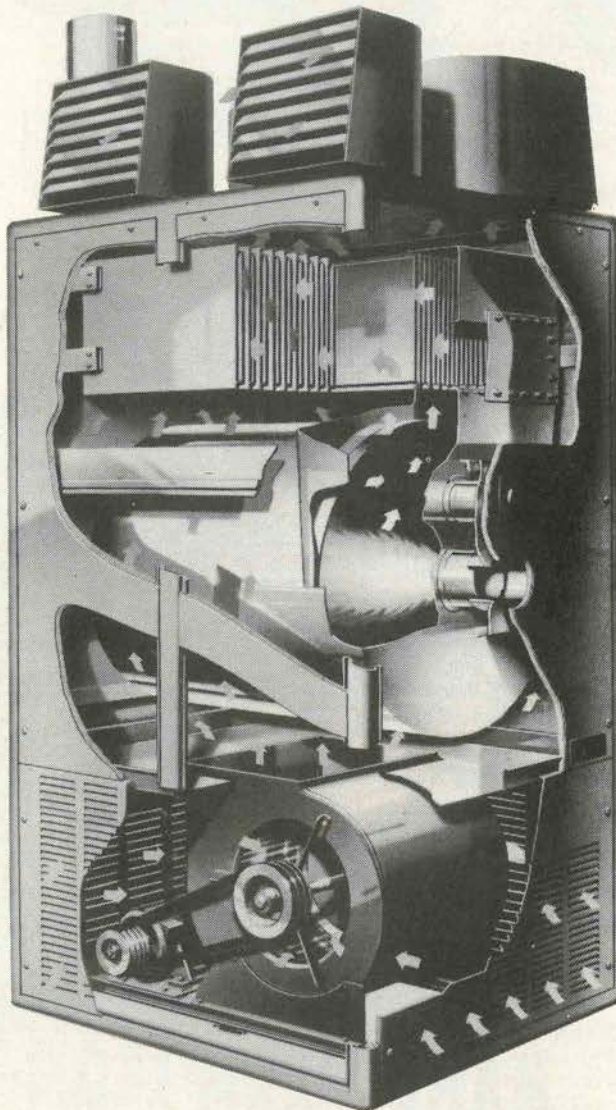
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